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Livermore-Amador Valley Wastewater Management Program, Berkeley, CA

Prepared for

Environmental Protection Agency
San Francisco, CA

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The purpose of this supplement is to provide an updated environmental impact assessment of the Livermore-Amador Valley Water Management Agency's (LAVWMA) wastewater management program. The three specific objectives of the supplement are to (1) assess in more detail the primary impacts associated with the construction and operation of the proposed wastewater effluent export pipeline; (2) present the mitigation measures that have been adopted as resolutions by the members of LAVWMA and will be included as conditions to grant funding by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB); and (3) present and environmental impact assessment of additional wastewater management alternatives that LAVWMA had investigated subsequent to the publication of the Final Environmental Impact Statement (EIS) in August 1976.

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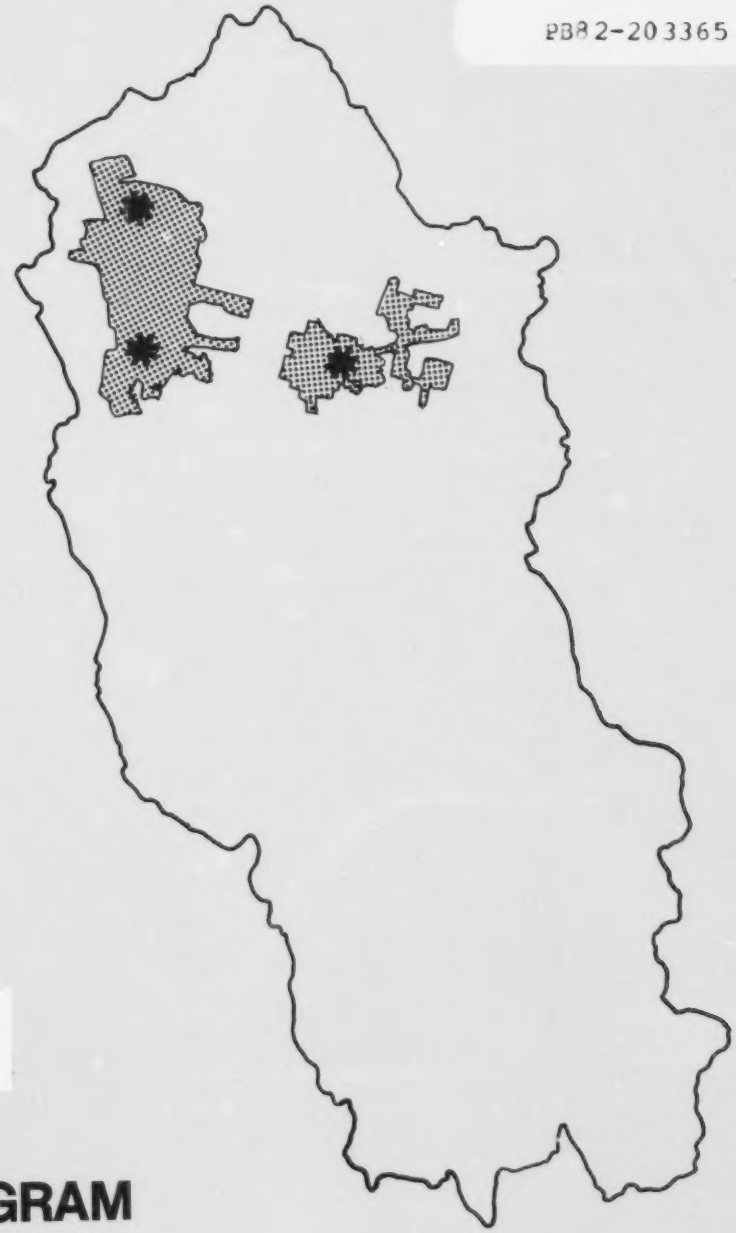

SUPPLEMENT TO FINAL ENVIRONMENTAL IMPACT STATEMENT

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LIVERMORE-AMADOR VALLEY WASTEWATER MANAGEMENT PROGRAM

SUPPLEMENT TO
FINAL ENVIRONMENTAL IMPACT STATEMENT
PROPOSED WASTEWATER MANAGEMENT PROGRAM
LIVERMORE-AMADOR VALLEY, ALAMEDA COUNTY, CALIFORNIA
C-06-1031-010 SCH 740 715 05 SEPTEMBER, 1977

PREPARED BY:

United States Environmental Protection Agency
Pacific Southwest Region IX
100 California Street
San Francisco, California 94111

Livermore-Amador Valley Water Management Agency
c/o ABAG
Hotel Claremont
Berkeley, California 94705

WITH TECHNICAL ASSISTANCE BY:

URS Company
155 Bovet Road
San Mateo, California 94402

RESPONSIBLE OFFICIALS:

Richard A. Coddington for

Paul De Falco, Jr.
Regional Administrator
Environmental Protection Agency
Region IX

R. G. Ladner Vice Chairman

for Dale Turner
Chairman
Livermore-Amador Valley Water
Management Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

To All Interested Agencies, Public Groups, and Concerned Individuals:

The following Supplement to the Final Environmental Impact Statement for the Livermore-Amador Valley Wastewater Management Program is hereby submitted for your information. This supplement contains additional information to that contained in the Final Environmental Impact Statement (EIS). This information was obtained after the completion of the Final EIS and does not change the impacts of the project. This supplement has been prepared in compliance with the National Environmental Policy Act of 1969 (Public Law 91-190), and implementing regulations by the Council on Environmental Quality and the Environmental Protection Agency.

The Draft EIS, Final EIS and public hearing transcript may be reviewed at:

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Livermore, California 94550

Valley Community Services District
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Livermore Municipal Library
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Please bring this information to the attention of
all persons who would be interested in this matter.

Sincerely,

Richard A Coddington for

Paul De Falco, Jr.
Regional Administrator

PROJECT DESCRIPTION/BACKGROUND

The purpose of this supplement is to update the environmental impact statement on the proposed wastewater management program of the Livermore-Amador Valley Water Management Agency (LAVWMA). The proposed project would consist basically of a 15.62 mgd-ADMM (million gallons per day - average day maximum month) capacity pipeline to export secondarily treated effluent from the LAVWMA export pump station in Pleasanton to a connection with the planned East Bay Dischargers Authority (EBDA) interceptor located in San Leandro. The route of the proposed export pipeline proceeds from the LAVWMA export pump station generally parallel to Interstate 580 over Boehmer Summit, through the communities of Castro Valley, San Lorenzo, and San Leandro along local streets. Ultimately, the LAVWMA effluent would be discharged into San Francisco Bay through the EBDA outfall located about 3 miles west of the Oakland airport. The regional setting of the project is shown in Figure 1-1. More detailed pipeline routes are shown in Figures 2-1 through 2-5.

As stated in the Draft EIS (November 1975), the LAVWMA wastewater management program is being proposed in response to the San Francisco Bay Regional Water Quality Control Board's Order 71-3. Order 71-3 is a mandate to remedy the problems associated with surface discharge from Livermore-Amador Valley wastewater treatment plants. It has been determined that the valley's wastewater poses a threat to the quality of groundwater downstream in the Niles Cone as well as local valley groundwater basins.

ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

The proposed project would have the beneficial impact of satisfying the objectives of Order 71-3, thus the potential for continued groundwater pollution due to infiltration of wastewater effluent would be eliminated.

Potential primary adverse impacts associated with the construction and operation of the export pipeline would include temporary noise, dust, traffic disruption, and wildlife displacement. Long-term or permanent adverse impacts would include some destruction of wildlife at the western end of the pipeline route, potential disturbance of unknown buried archeologic remains, consumption of mineral resources,

and consumption of energy to operate the pump station.

With the exception of the consumption of mineral resources and energy, which are unavoidable adverse impacts, the above impacts would be reduced to acceptable levels by the implementation of adopted mitigation measures as stipulated as conditions of the construction grant.

An effect of the proposed project is the accommodation of additional population growth and development by providing capacity in excess of present needs. The secondary or indirect impacts of the project on the valley environment are the effects of the form and location of this development. While the proposed project will not cause such development, it will accommodate it. The principle secondary impact of the proposed project would be decreased air quality that would result from population growth associated with increases in vehicular traffic. EPA feels that the local communities have shown good faith in their effort to reduce air quality impacts due to population growth by adopting resolutions in support of the Air Quality Maintenance Planning process (see Appendix C).

In conclusion, the proposed project has been determined to be environmentally sound by EPA. Similarly, the State Water Resources Control Board (SWRCB) has determined that the proposed project is the most cost-effective solution to the existing wastewater discharge problem.

ALTERNATIVE PROJECTS CONSIDERED

In the initial stage of the screening process 15 wastewater management alternatives were considered. These were reduced to five viable alternatives on the basis of engineering and economic feasibility. The five viable alternatives which were then evaluated for their environmental impacts included (1) treatment and export to South San Francisco Bay; (2) treatment and export to the East Bay Dischargers Authority Interceptor (ultimately the selected project); (3) treatment and export with discharge to San Lorenzo Creek; (4) treatment (including demineralization) and local discharge; and (5) impoundment and reuse for irrigation with wet-weather release of excess water (salt routing). The impacts of each of these alternatives have been discussed in the Draft EIS.

Following the publication of the Final EIS, three additional alternatives were environmentally evaluated. These included (1) treatment and export to Suisun Bay; (2) treatment and export to the East Bay Dischargers Authority Interceptor at Alvarado; and (3) treatment and export to South San Francisco Bay (a re-evaluation). The results of the environmental analysis of these alternatives are presented in Appendix A of this Addendum. In addition, a combination of 66 treatment-reclamation-export alternatives were evaluated from an engineering and economic basis. A summary of this analysis is presented in Appendix B of this volume.

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SECTION 1

INTRODUCTION

PURPOSE

The purpose of this supplement is to provide an updated environmental impact assessment of the Livermore-Amador Valley Water Management Agency's (LAVWMA) wastewater management program. The three specific objectives of the supplement are to (1) assess in more detail the primary impacts associated with the construction and operation of the proposed wastewater effluent export pipeline; (2) present the mitigation measures that have been adopted as resolutions by the members of LAVWMA and will be included as conditions to grant funding by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB); and (3) present an environmental impact assessment of additional wastewater management alternatives that LAVWMA had investigated subsequent to the publication of the Final Environmental Impact Statement (EIS) in August 1976.

This supplement is not meant to be a complete environmental impact statement. It is a supplement to the previously published Draft EIS (November 1975) and the Final EIS (August 1976). The supplement is based on the more detailed LAVWMA Facility Plan (Carollo Engineers, 1976) and a report on reclamation-reuse and export alternatives (CH2M-Hill, March 1977).

BACKGROUND OF EIS

As stated above, this supplement is the third volume associated with the environmental impact analysis of the LAVWMA wastewater management program. The first volume, the Draft EIS, contains the full environmental inventory of the LAVWMA study area and an environmental impact evaluation of each of six viable alternatives. The principal task of the Draft EIS was to evaluate various wastewater management alternatives and recommend the most environmentally acceptable. It was also the task of the Draft EIS to address the secondary impacts of an upgraded and expanded wastewater management system, particularly with regard to air quality in the Livermore-Amador Valley.

The Final EIS was published following a public review period of 45 days and a subsequent public hearing on the Draft EIS. The Final EIS contains written responses to comments received on the Draft EIS. It also delineates the primary environmental

impacts associated with the construction and operation of the Livermore Interceptor component of the LAVWMA wastewater management program and suggests possible mitigation measures. The Livermore Interceptor is planned to transport wastewater effluent from the Livermore Water Reclamation Plant across the valley to the proposed LAVWMA export pump station.

Normally, the Final EIS is the final publication in the EIS process. However, the voters' rejection of a November 1976 local ballot bond measure for the LAVWMA project, together with subsequent corrections in the estimated project costs, public opposition to the selected project, and the concern over potential increases in operating costs, prompted LAVWMA to authorize an investigation of additional alternatives. These alternatives included an effluent pipeline northward to a Suisun Bay discharge and a pipeline through Niles Canyon to a connection with the planned EBDA Interceptor at Alvarado. In addition, a previously rejected alternative consisting of a pipeline through Niles Canyon with a discharge into San Francisco Bay just north of the Dumbarton Bridge was re-evaluated. An environmental assessment of these alternatives was made and a preliminary report was distributed to LAVWMA and appropriate review agencies on March 24, 1977. That report is reproduced as Appendix A of this supplement.

Concurrently with the environmental assessment, an engineering and economic feasibility study of 66 combinations of alternative export pipeline routes and reclamation possibilities was conducted and submitted to the LAVWMA Board on March 24, 1977 (CH2M-Hill, 1977). A summary of this report is reproduced as Appendix B.

Upon review of the environmental and engineering reports on the alternatives, LAVWMA decided that the previously selected project (i.e., an export pipeline across Boehmer Summit to a connection with the planned East Bay Dischargers Authority [EBDA] Interceptor) was still the most cost-effective.

PROJECT DESCRIPTION

The regional setting of the LAVWMA study area and the proposed project is shown in Figure 1-1. The basic components of the export system that is evaluated in this supplement consist of two regulating reservoirs that would receive effluent from the VCSD Treatment Plant, a pump station to pump the effluent over Boehmer Summit, and the actual export pipeline that would transport the effluent to the EBDA Interceptor for ultimate discharge into San Francisco Bay.

More detailed (larger scale) maps of the proposed route are contained in Section 2, Figures 2-1 through 2-5; an index map is contained in Figure 2-6. Larger scale (1 inch = 50 feet) air photos and topographic maps for the entire pipeline route will be contained in the contract documents. Although these documents are not expected to be completed before September 1, 1977, the route maps can be reviewed prior to this date by contacting the Association of Bay Area Governments (ABAG) in Berkeley, California.

From the pump station at the east end of the pipeline, the proposed route crosses Interstate 680 (I-680) to the west, then proceeds northward along the west side of I-680 near to the I-680 and I-580 interchange. It then turns westward across open fields, parallel to I-580, around the Foothill Road

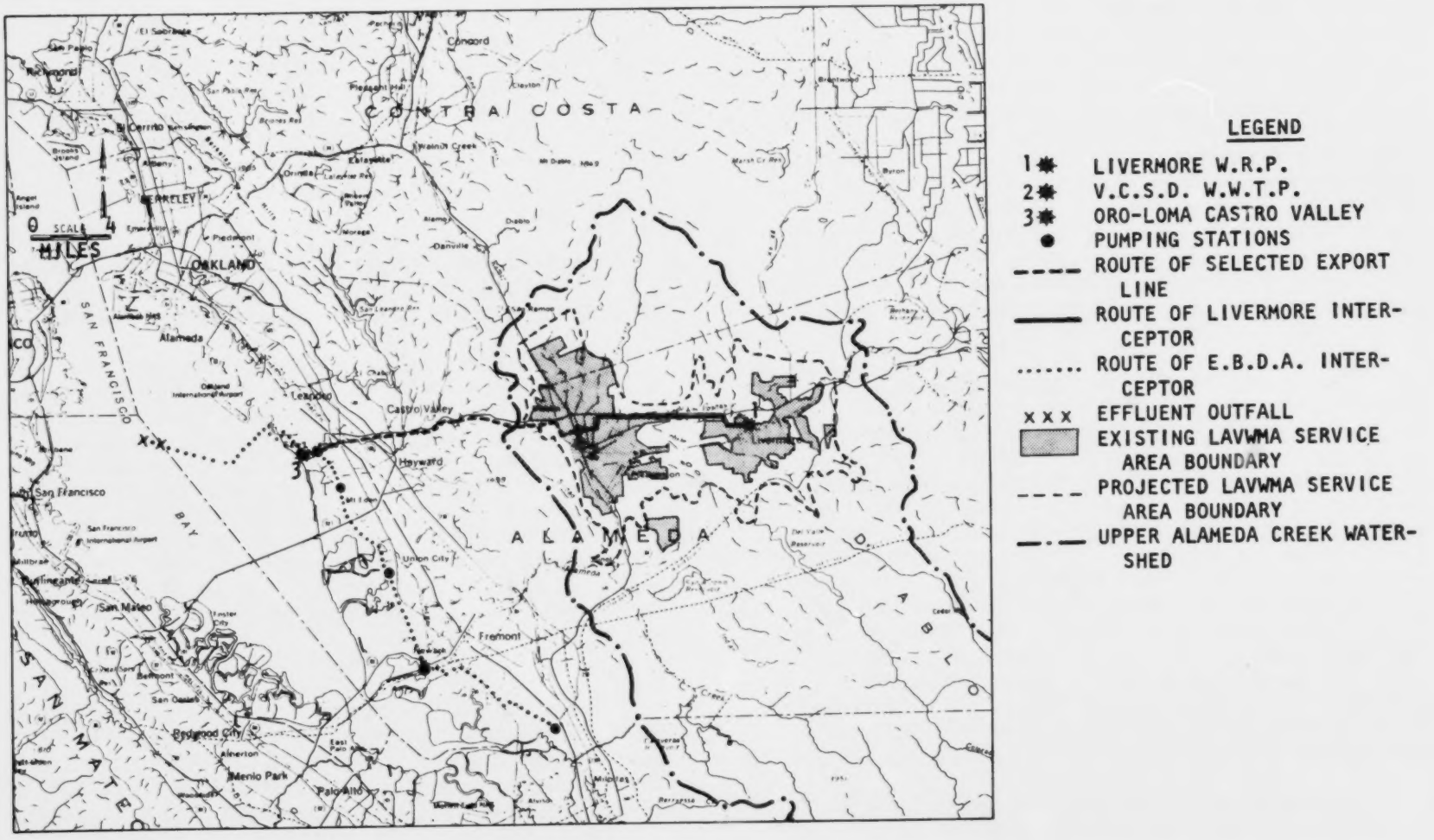

FIGURE 1-1. REGIONAL SETTING

interchange, along Dublin Road, and into the right-of-way of the new frontage road currently under construction by Caltrans on the south side of I-580. The pipeline route follows the new frontage road over Boehmer Summit, to Eden Canyon Road. From this point it continues down East Castro Valley Boulevard to a point just west of Crow Creek where it turns south onto Grove Way in Castro Valley. From there the route proceeds through the urban areas of Castro Valley, San Lorenzo, and San Leandro, along Grove Way to Foothill Boulevard, Apple Avenue, Ocean View Avenue, Birch Street, Mattox Road, Mission Boulevard, Lewelling Boulevard, across open, filled marshland to the EBDA force main near the shoreline of San Francisco Bay.

From an engineering design perspective, the export pipeline can be divided into two sections: a force main from the LAVWMA pump station to Boehmer Summit; and a gravity-flow line from the summit to the junction with the EBDA force main at the west terminus of the line. The total length of the export pipeline is approximately 81,260 feet (nearly 15-1/2 miles). The force-main section would consist of 19,260 feet of 36-inch diameter pipe. The gravity-flow section would consist of approximately 62,000 feet of pipe ranging in diameter from 24 to 30 inches. The total static lift, or difference in elevation from the regulating reservoir low water level to Boehmer Summit, is about 445 feet. The difference in elevation, or head, between Boehmer Summit and the western end of the pipeline is about 745 feet.

Appurtenances to the pipeline would include a pump station and regulating reservoirs at the eastern end of the line, access manways along the pipeline, and an emergency surge relief, sampling, and metering station near the western end of the line. Two regulating reservoirs are planned to receive secondary effluent from the Livermore Water Reclamation Plant and the VCSD Wastewater Treatment Plant (see Figure 2-1). Normal operation of the system would utilize one reservoir for working storage and one reservoir for emergency storage. The function of the regulating reservoirs is to provide flow equalization storage of the inflows to the system, thus keeping the pumps and pipeline operating at design capacity.

Access manways would be located at approximately 4,000- to 8,000-foot intervals along the pipeline. These manways would contain air and vacuum valves.

The emergency surge relief station near the western terminus would include a small building (approximately 10 x 12 feet) that would house an automatic sampling device, a flow meter and pressure release valves. The pressure relief valves are included as a safety feature to protect the integrity of the LAVWMA line if the connection into the EBDA line is cut off for some reason. The discharge from the pressure release valves would occur only in an emergency and would be conveyed to the San Lorenzo Creek by a 24-inch pipeline (see Figure 2-5).

PROJECT MODIFICATIONS

Since the publication of the Final EIS in August 1976, the design capacity of the export pipeline has been reduced from 19.72 mgd-ADMM (million gallons per day - average day/maximum month flow) to 15.62 mgd-ADMM. The reduction in the pipeline design capacity was the result of LAVWMA's decision to eliminate 4.10 mgd of reserve capacity for industrial users. This additional capacity would not have been eligible for federal and state funding. Thus, it should be

noted that Table 4-2 of the Final EIS is now obsolete, and the 1998 capacity requirements for each of the three LAVWMA jurisdictions would be as follows: Livermore, 6.62 mgd; Pleasanton, 4.87 mgd; and VCSD, 4.13 mgd.

PROJECT COSTS AND FUNDING

The estimated total cost of the project is $38 million. Except for land, right-of-way, bond, and most legal costs, project costs are eligible for 87-1/2 percent funding through federal and state grant programs; 75 percent from EPA and 12-1/2 percent from the SWRCB. The remaining costs would be funded locally through issuance of revenue bonds. The estimated annual operating and maintenance costs for the proposed project would be $354,000 in 1980 and $737,000 in 1990 (CH2M-Hill, 1977; Table 4-1).

The State Water Resources Control Board (SWRCB), which is the administrator for the Clean Water Grant program, has issued a concept approval letter to LAVWMA for step 2 (design phase) funding. Step 3 (construction phase) approval for funding is anticipated on or before September 30, 1977, following a review of the project design.

SCOPE AND DATA SOURCES

The environmental assessment of the primary impacts of the proposed export pipeline was based on a review of published literature and communications with appropriate agencies and organizations. A list of persons and organizations contacted and reference material used is included as appendices D and E respectively. In addition to the above sources of information, field surveys of the pipeline route were made to examine the biological resources (URS Company, 1976), the geological conditions (Harding-Lawson, 1976), and the archeological resources (Holman-Chavez, 1976). A copy of the geologic report is available for review at the offices of ABAG in Berkeley and at the Valley Community Services District office in Dublin. The archeological report can be reviewed at the San Francisco office of EPA, the State Water Resources Control Board in Sacramento, the State Office of Historic Preservation (Department of Parks) in Sacramento, or at the Treganza Museum, San Francisco State University.

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SECTION 2
ENVIRONMENTAL SETTING

INTRODUCTION

To assess the magnitude and significance of potential environmental changes associated with the construction and operation of the proposed LAVWMA pipeline, an assessment of the existing environmental conditions along the pipeline route is needed. Of particular importance is the identification of environmentally sensitive areas, which represent areas of potential adverse impact. These areas are designated on Figures 2-1 through 2-5; an index map is included as Figure 2-6.

The following descriptions of the man-made and natural environments along the route of the proposed export pipeline were obtained from available data and communications with appropriate individuals in state and local governmental agencies. In addition, a field reconnaissance of biological and archeological resources was conducted along the export pipeline route. Also, a geotechnical report was completed for Volume 3A of the Project Report (Harding-Lawson, 1976).

LAND USE

The path of the proposed export pipeline follows existing rights-of-ways, with only a few exceptions. These exceptions are as follows: (1) privately owned vacant land at the western end of the pipeline route, west of the terminus of Lewelling Boulevard; (2) state-owned vacant land between Grove Way and Castro Valley Boulevard in Castro Valley; (3) privately owned vacant land near the eastern end of the pipeline route, between Dublin Road and I-680; and (4) vacant land owned by the U.S. Army at the site of the proposed pumping station and regulating reservoirs at the east end of the pipeline route. The location of these areas are shown on Figures 2-1, 2-3, and 2-5. A tabulation of existing land use along the entire pipeline route is contained in Table 2-1.

The private land at the western end of the pipeline route is designated for industrial use in both the General Plan and Zoning Ordinance of the City of San Leandro; there are presently no definite

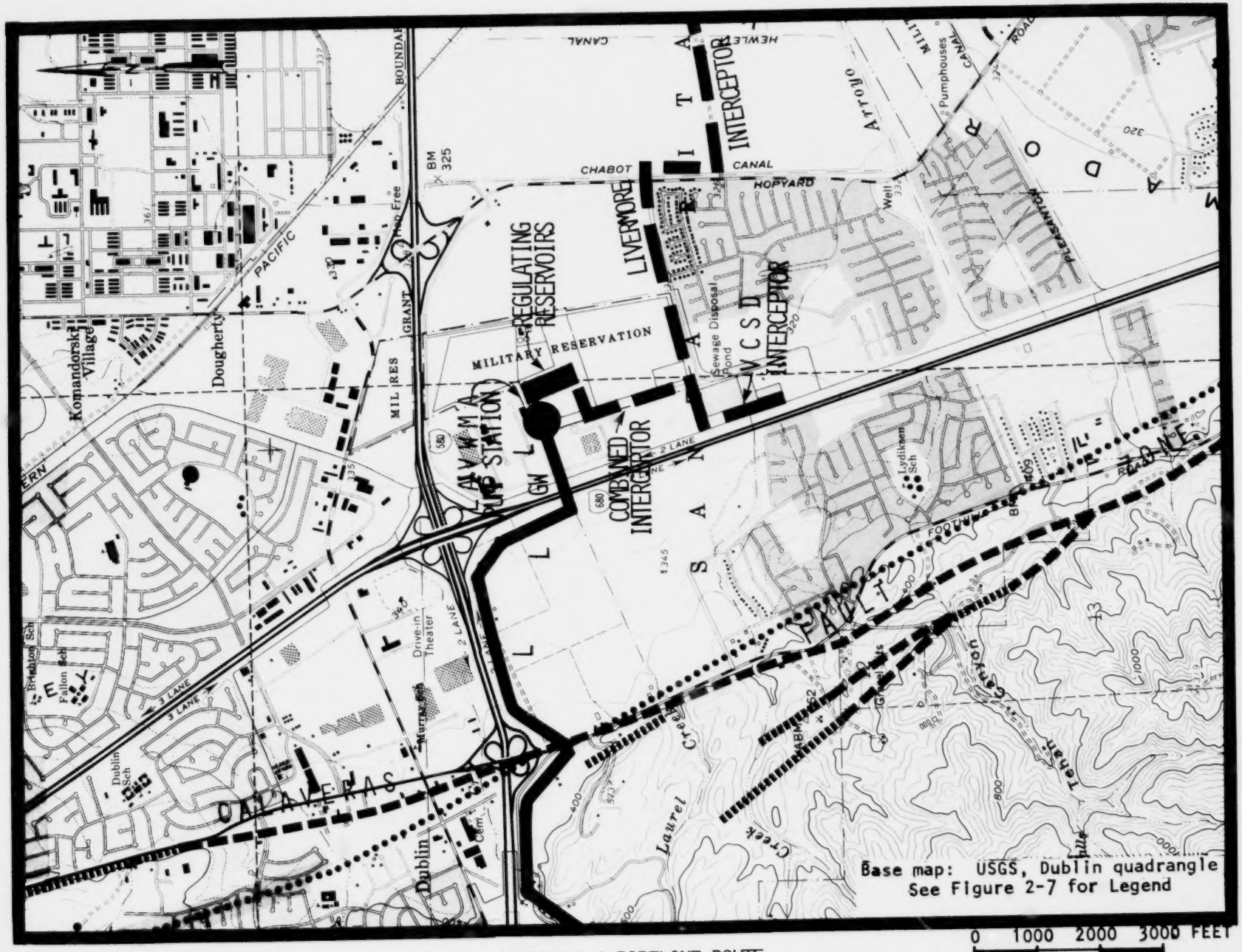

FIGURE 2-1 PIPELINE ROUTE

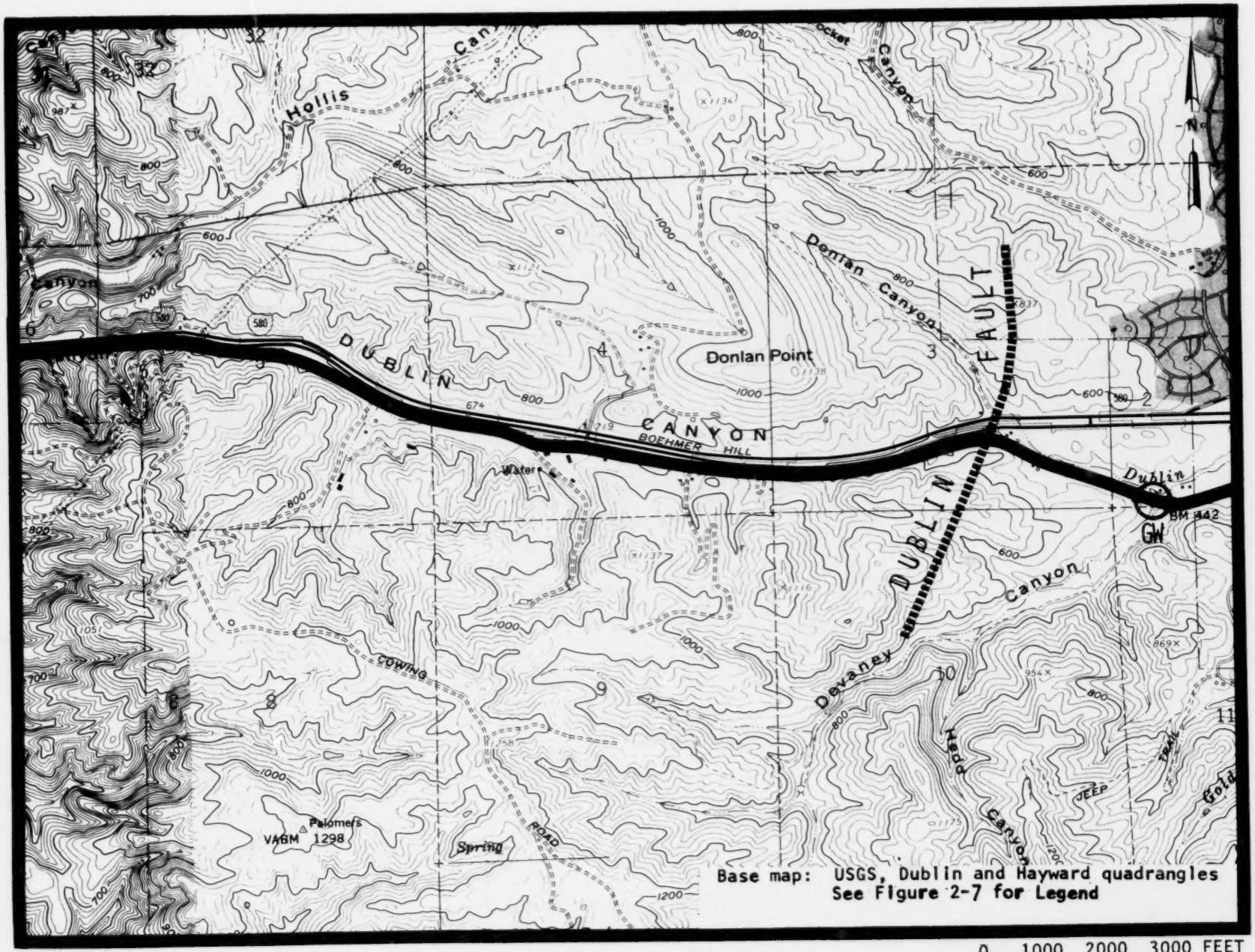

FIGURE 2-2 PIPELINE ROUTE

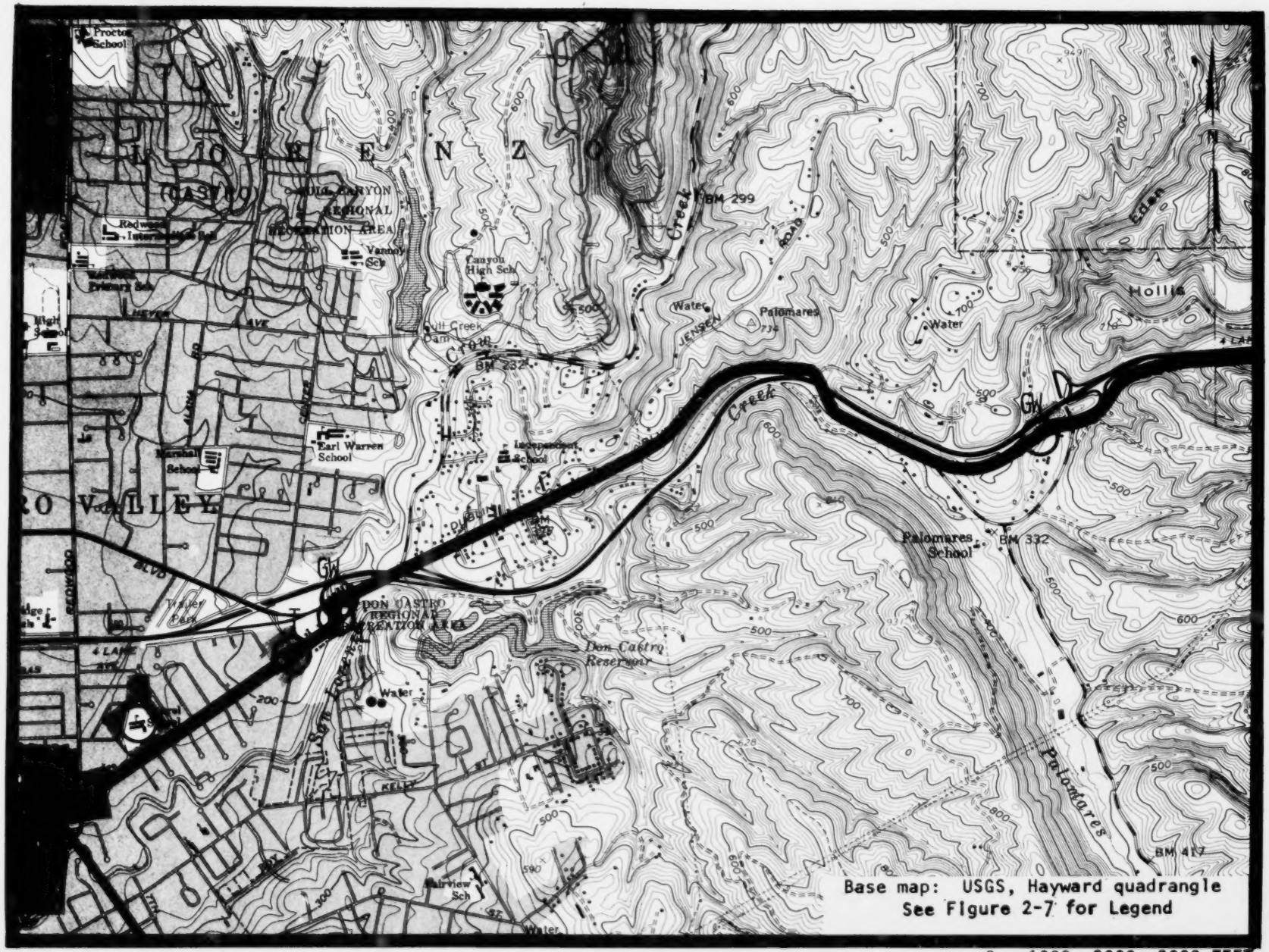

FIGURE 2-3 PIPELINE ROUTE

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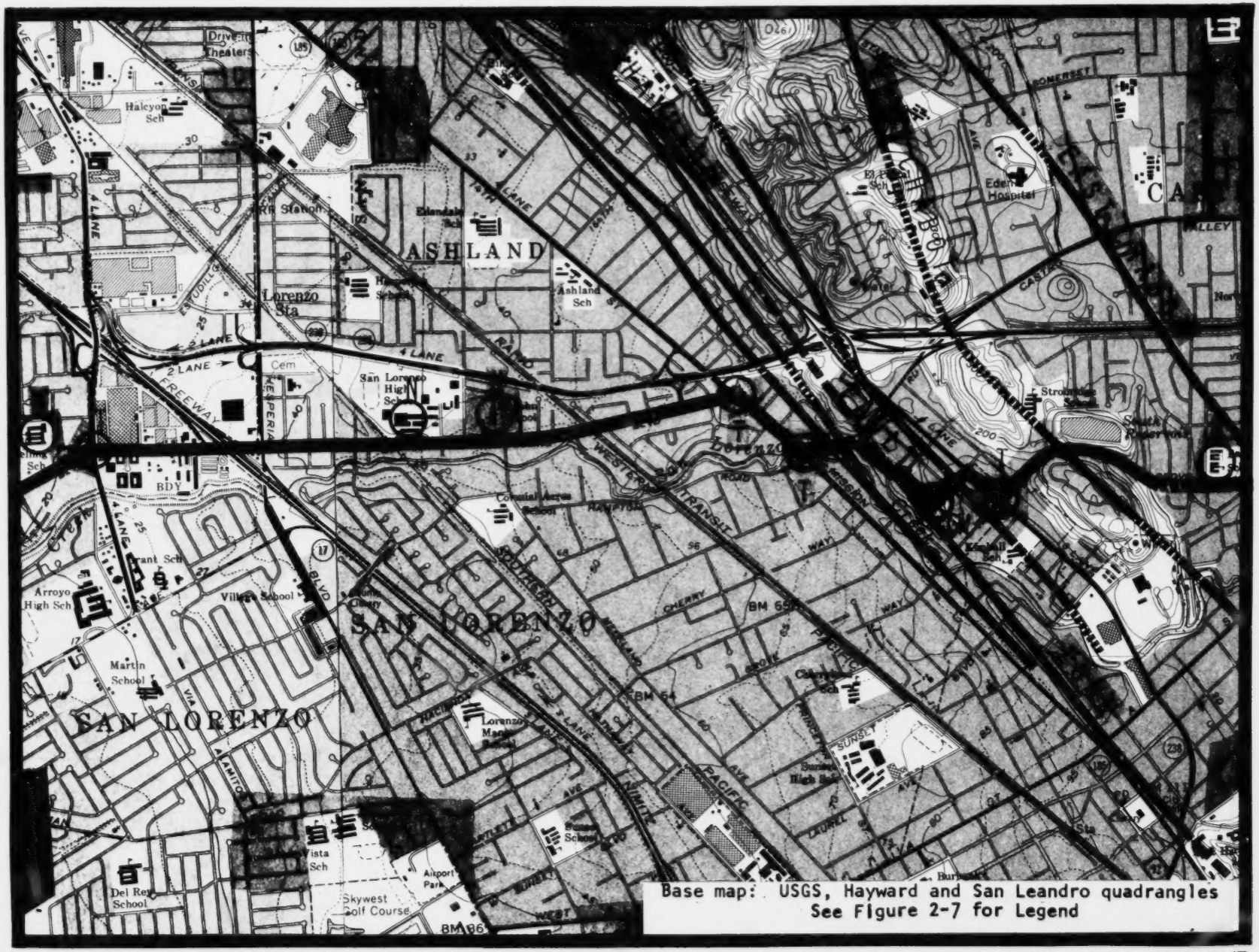

FIGURE 2-4 PIPELINE ROUTE

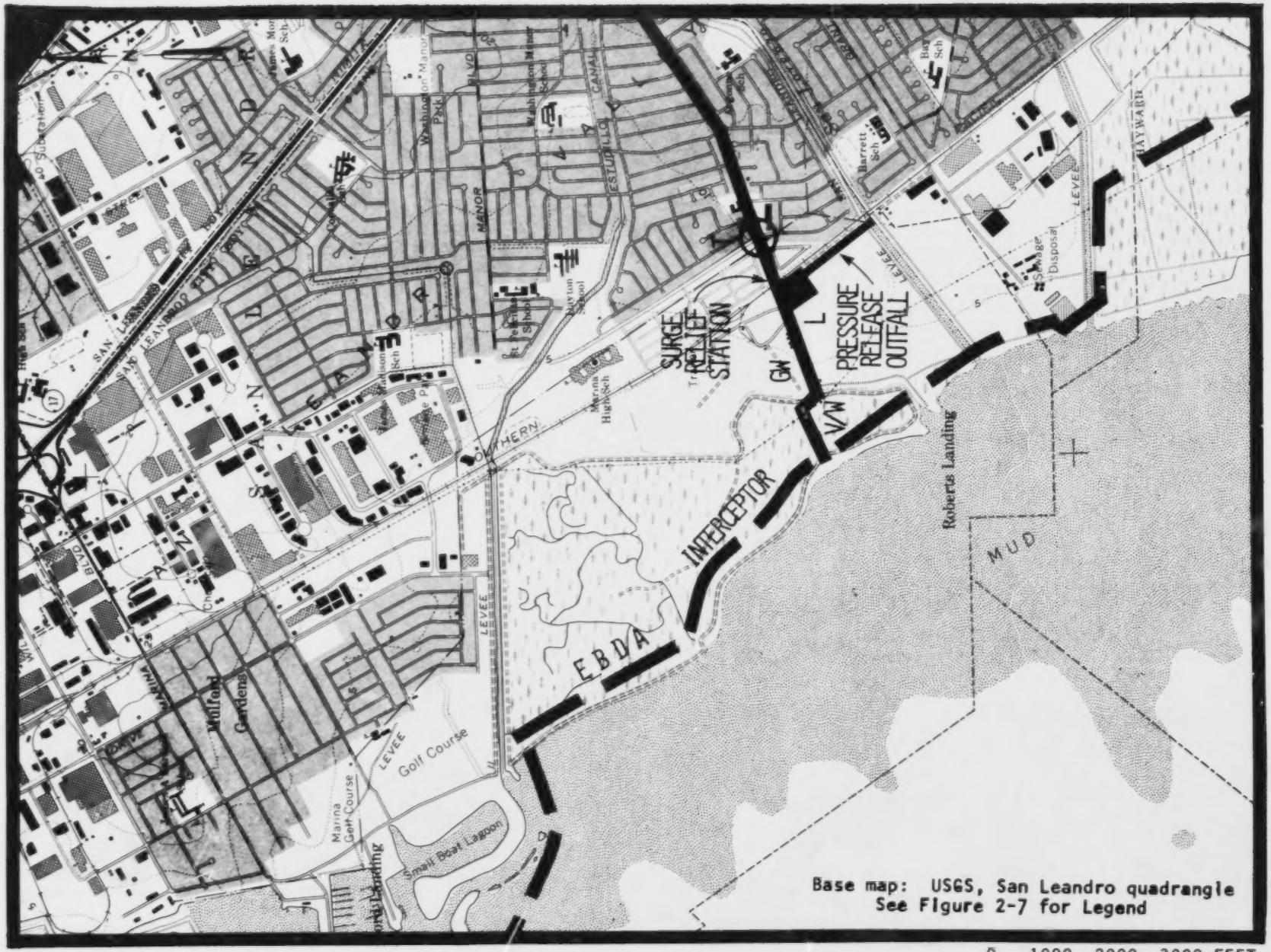

FIGURE 2-5 PIPELINE ROUTE

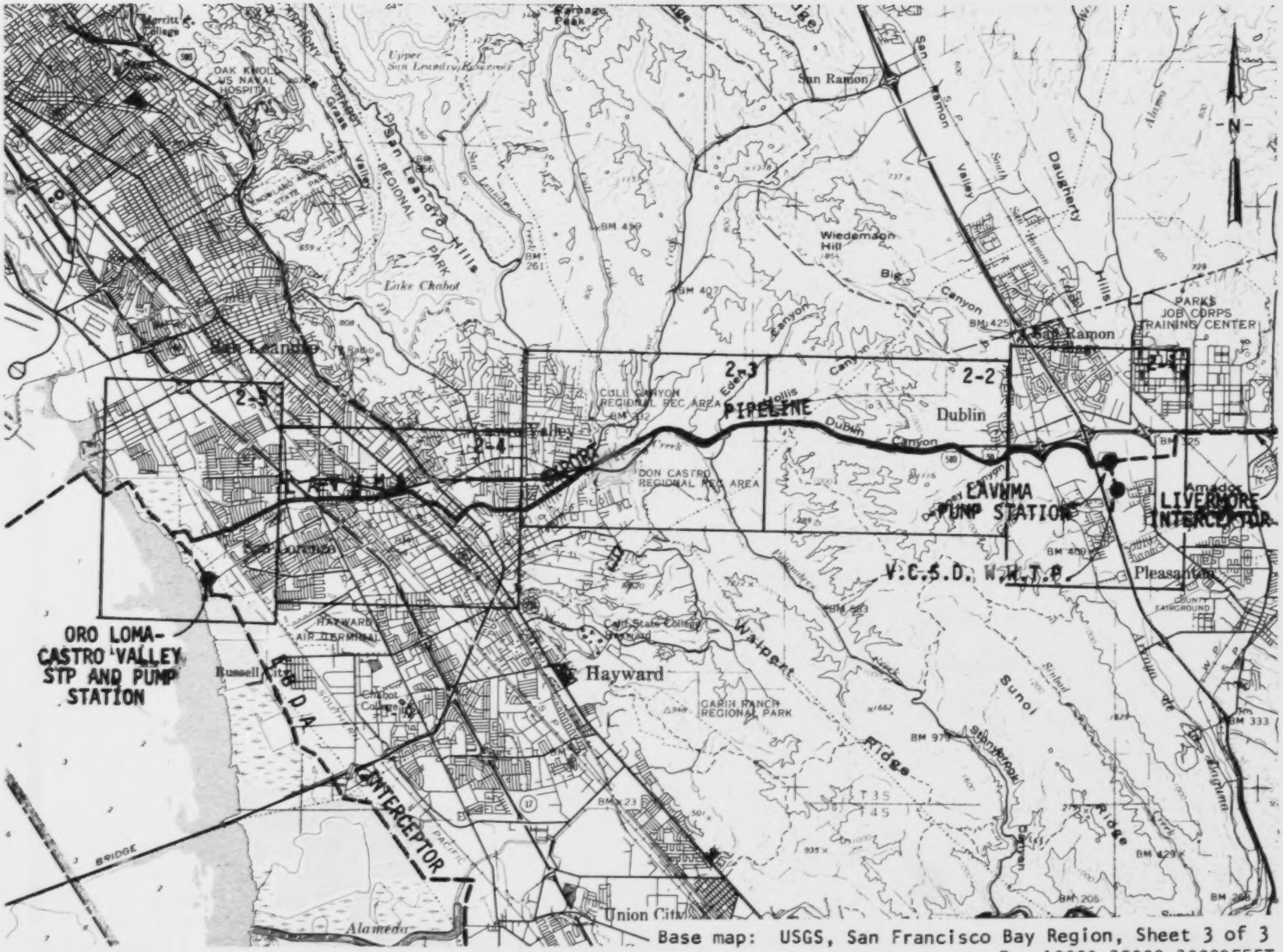

FIGURE 2-6. LAVWMA PIPELINE ROUTE-INDEX MAP

LEGEND

T	Major intersection
L	Private land or state lands beyond existing rights-of-way
N	Noise sensitive receptor
V/W	Sensitive vegetation and wildlife habitat area
▬ ▬ ▬ ▬	Fault, trace accurately located
▮▮▮▮▮▮▮▮▮▮▮▮▮	Fault, trace approximately located
••••••••	Fault, trace concealed by alluvium
GW	Area of shallow groundwater

LEGEND FOR PIPELINE ROUTE MAPS
(Figures 2-1 through 2-5)

FIGURE 2-7.

Table 2-1. EXISTING LAND USE ALONG THE LAVWMA EXPORT PIPELINE ROUTE

PIPELINE SEGMENT	DISTANCE (ft)	LAND USE
Western terminus	100	Right-of-way, EBDA force main
EBDA force main right-of-way to Lewelling Blvd.	2,460	Vacant land, private property
Lewelling Blvd. to Mission Blvd.	17,830	Urban street
Mission Blvd. to Mattox Road	1,350	Urban street
Mattox Road to Birch Street	850	Urban street
Birch Street to Ocean View Drive	950	Urban street
Ocean View Drive to Apple Avenue	650	Urban street
Apple Avenue to Foothill Blvd.	760	Urban street
Foothill Blvd. to Grove Way	790	Urban street
Grove Way to 360 ft southwest of Castro Valley Boulevard	10,150	Urban street
Between Grove Way and East Castro Valley Boulevard	360	Vacant land, State-owned
East Castro Valley Blvd. to I-580 south frontage road	13,550	Roadway
I-580 Frontage Road to Dublin Road	18,300	Road right-of-way
Dublin Road to near Foothill Boulevard	6,880	Roadway
Between Dublin Road and Foothill Road	920	Open field, private lands
Between Foothill Road and Pump Station (eastern terminus)	6,800	Open fields (private lands) except at crossing of Foothill Road, I-680, and Johnson Industrial Road

Source: URS Company.

plans for development (see Figure 2-5). The State land in Castro Valley is owned by the California Department of Transportation and is to be used for the widening of I-580 (see Figure 2-3). The private property located between Foothill Road and I-680 in Pleasanton is designated as a proposed regional shopping center in the City of Pleasanton's General Plan (see Figure 2-1). The City's Zoning Ordinance designates these lands as a regional shopping center in the western two-thirds and a Planned Unit Development in the eastern one-third. At this time the concept for a regional shopping center or a residential development on these lands is only in the initial planning stages. The vacant land owned by the U.S. Army at the site of the proposed pumping station and regulating reservoirs is designated for agricultural and grazing by the City of Pleasanton Planning Department. This property is part of an abandoned sewage disposal area which once served the Camp Parks military reservation.

TRAFFIC

Existing traffic volumes on all streets that would be disturbed by pipeline construction have been obtained from Caltrans, Alameda County, and the City of San Leandro. Data representing average daily travel (ADT) and peak-hour travel are presented in Table 2-2.

Congested traffic situations presently occur in many places along the proposed pipeline route. Peak-hour traffic demand is of sufficient volume to be approaching, if not at, capacity along the following roadways: East Castro Valley Boulevard between Grove Way and Crow Canyon Road; Grove Way between East Castro Valley Boulevard and Foothill Boulevard; and Farnsworth Street. The following intersections along these roadways particularly suffer congestion: Grove and Center Street; Grove Way and Redwood Road; Grove Way and Foothill Boulevard; Mattox Road and Mission Boulevard; Mission Boulevard and Lewelling Boulevard; Lewelling Boulevard and Hesperian Boulevard; Lewelling Boulevard and Washington Avenue; and Lewelling Boulevard and Wicks Boulevard (see Figures 2-3, 2-4, and 2-5).

With the exception of Foothill Boulevard (State No. 238), the above mentioned roadways' ADT are well below capacity. Foothill Boulevard, with an ADT of 35,500, is probably approaching ADT capacity in the four-lane stretch, south of the I-580 interchange.

NOISE

The existing noise environment along the pipeline route is affected primarily by traffic. Residential areas along Grove Way and Lewelling Boulevard experience the highest existing noise levels, estimated to be between 60-65 dBA during peak-traffic hours within 50 feet of the roadway. Other sensitive receptors along the pipeline route include several schools, specifically Laurel School, Baywood School, St. John School, San Lorenzo High School, and Lewelling School (see Figures 2-3, 2-4, and 2-5). Existing peak-hour noise levels at the school boundaries are estimated to vary between 55 and 65 dBA, depending on proximity to the roadway. The existing noise levels generally exceed HUD and DOT* criteria, which are to be applied at the boundary of the receptor. However, assuming that buildings generally reduce noise levels from 15 to 30 dBA, existing noise levels inside residences and schools along the pipeline

*Noise criteria are fully discussed in Appendix H of the Draft Environmental Impact Statement volume.

Table 2-2

TRAFFIC VOLUME ON STREETS AFFECTED BY CONSTRUCTION OF EXPORT PIPELINE

STREET	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR
Foothill Road-Pleasanton	1,000' S. of Dublin Road	10,205	908 p.m.	1976
E. Castro Valley Blvd.	100' E. of Crow Canyon Rd.	2,374 WB	327 p.m.	1976
	At Crow Canyon Road	9,148 EB	1,198 p.m.	1976
	100' E. of I-580 Off-Ramp	1,969 EB	253 p.m.	1976
	150' E. of Grove Way	12,548 WB	1,555 a.m.	1975
	100' E. of Grove Way	15,753 EB	2,010 p.m.	1975
Grove Way	150' S.W. of E. Castro Valley Blvd.	8,864 EB	988 p.m.	1975
	150' S.W. of E. Castro Valley Blvd.	8,691 WB	1,034 a.m.	1975
	1,000' E. of Center Street	9,558 WB	1,185 a.m.	1976
	1,000' E. of Center Street	9,630 EB	1,002 p.m.	1976
Redwood Road (cross street)	200' S. of Castro Valley Blvd.	10,682 SB	796 p.m.	1976
	300' S. of Castro Valley Blvd.	12,583 NB	1,206 p.m.	1976
Center Street (cross street)	300' S. of Grove Way	11,930 SB	1,000 p.m.	1975
	260' S. of Grove Way	9,773 NB	813 p.m.	1975
Foothill Boulevard	At Grove Way	35,500	3,550	1975
Apple Avenue	10' N.E. of Locust Street	413 WB	55 p.m.	1973
	100' S.W. of Locust Street	120 EB	12 p.m.	1973
Birch Street	30' S. of Mattox Road	463 NB	50 a.m.	1969
	50' S. of Mattox Road	484 SB	83 p.m.	1969
Mattox Road	100' W. of Birch Street	6,280 EB	548 p.m.	1969
	100' W. of Birch Street	5,758 WB	677 p.m.	1969
Mission Blvd.	At Mattox Road	20,400	2,100	1975

Table 2-2 (Continued)

TRAFFIC VOLUME ON STREETS AFFECTED BY CONSTRUCTION OF EXPORT PIPELINE

STREET	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR
Lewelling Boulevard	150' E. of Hesperian	8,379 EB	834 p.m.	1975
	150' E. of Hesperian	7,776 WB	640 a.m.	1975
	100' W. of Hesperian	10,618 WB	1,247 a.m.	1975
	150' W. of Hesperian	6,694 EB	653 p.m.	1975
	At Farnsworth	5,700 WB	1,039 p.m.	1975
	At Farnsworth	5,011 EB	917 p.m.	1975
	E. of Wicks	3,741 WB	587 a.m.	1976
	W. of Wicks	316 EB	34 a.m.	1976
Hesperian Boulevard (cross street)	100' N. of Lewelling	18,665 NB	1,404 p.m.	1975
	100' N. of Lewelling	16,791 SB	1,289 p.m.	1975
Wicks Boulevard (cross street)	N. of Lewelling	4,755 SB	1,017 p.m.	1976
	S. of Lewelling	729 NB	53 p.m.	1976

1 - ADT = average daily traffic count; EB = Eastbound Only; WB = Westbound Only; SB = Southbound Only; NB = Northbound Only.
2 - Peak Traffic Count; p.m. and a.m. refer to afternoon and morning peak hour, respectively.

Source: Alameda County Road Division,
City of San Leandro Public Works Department.

route are marginally acceptable, i.e., the speech interference level of 45 dBA would be exceeded only in the noisiest locations at peak hours.

Residences along the less heavily traveled roadways within the pipeline route enjoy much lower noise levels at present. For example, noise levels along Birch Street, Ocean View Drive, and Apple Avenue are estimated to be 51 dBA within 50 feet of the roadway during peak hour.

AIR QUALITY

Since dust generation is an unavoidable product of construction operations, existing particulate concentrations in the area of pipeline construction are of concern. Although permanent monitoring of suspended particulates in the general area of pipeline construction is limited to Fremont and Livermore, inferences can be drawn. Suspended particulate concentrations generally exceed ambient air quality standards throughout the Bay Area, and the pipeline vicinity is no exception. The State 24-hour standard for suspended particulates was exceeded 9.2 and 22.5 percent of observed days at Fremont and Livermore, respectively, in 1975. The State annual standard of 60 $\mu g/m^3$ was also exceeded at Livermore in 1975, with an average concentration of 69 $\mu g/m^3$. Suspended particulates can therefore be considered a problem pollutant in the entire area of construction.

BIOLOGY

Vegetation

The vegetation resources of the proposed route for the LAVWMA export system lie entirely within disturbed road, street, urban, and filled bay lands. No rare or endangered or commercially valuable plants occur within the pipeline route. Nor are there any trees or significant stands of brush within the proposed route. Existing vegetation along most of the route consists of planted ornamental trees. At the western end of the route, the proposed right-of-way extends across the remnants of disturbed or recolonized pickleweed (Salicornia pacifica) marsh behind the dikes (see Figure 2-5). This latter vegetation is the most significant vegetative type found along the entire route, but the type is disturbed and does not reflect the pristine conditions that existed before diking, draining, and filling of the area.

The westernmost 750 feet of the proposed route passes across filled land for a dirt road. South of the route lies a pickleweed marsh. To the north of the route the pickleweed intergrades with salt grass (Distichlis spicata) and brass buttons or marsh grindelia (Grindelia humilis) which in turn gives way to coyote bush (Baccharis) and various introduced grasses and forbs. This sequence of vegetation type is quite common around the diked bay lands of San Francisco and San Pablo Bays. Absence of tidal inundation precludes the lowest stage of cordgrass (Spartina foliosa) marshes. The present marsh is maintained by seasonal inundation by rain water.

Moving eastward along the route, the same sequence of pickleweed-salt grass-coyote bush exists at about 700 to 800 feet from the terminus and near the high-voltage power lines. From 850 to 925 feet east of the terminus, the route crosses a small drainage ditch with a similar marsh and low upland vegetations.

From 950 feet east of terminus to 2,700 feet, the route passes through the disturbed fill of an unpaved road and does not contain any native vegetation or ornamental trees. From this point, the route continues eastward along existing paved streets of San Leandro, San Lorenzo, and Castro Valley.

Near the intersection of Grove Way and Castro Valley Boulevard (about 34,600 feet east of the terminus) the route passes across a vacant lot owned by the State Department of Transportation which contains disturbed exotic and ornamental vegetation but does not contain any significant native vegetation nor any trees, although a large grove of eucalyptus trees exists to the east of the route.

The route continues eastward along Castro Valley Boulevard and East Castro Valley Boulevard to its intersection with Eden Valley Road (48,000 feet east of the pipeline terminus). Many ornamental trees occur along the streets and boulevards of this section of the route but none are directly within the route. These adjacent trees may extend their roots under the roadway pavements but these roots are of little use or importance, except of acquiring moisture from water and sewer pipe leakage.

From the Eden Valley Road intersection the route continues along the right-of-way of I-580 and does not encounter any significant vegetation (e.g., trees or dense chaparral) due to the past years' construction and clearing of slopes and placement of fills for the widening of I-580. Some coyote bush has reinvaded filled slopes along I-580 at 50,600 and 42,200 feet from the pipeline terminus.

The route emerges from the I-580 right-of-way about 1.4 miles west of the Foothill Road/I-580 interchange. From this point to the interchange, the pipeline lies along the south side of Old Dublin Road. In the first portion of this segment, the pipeline route passes along the base of two steep slopes which are covered with large coast live oak (Quercus agrifolia). Immediately west of the interchange, the pipeline route passes across about 900 feet of grassland pasture and through planted ornamental trees. The grasslands include European introduced grasses and forbs. Similar grasslands with some coyote bush occur between Foothill Road and I-680 (along the south side of I-580).

Between I-680 and Johnson Industrial Drive, the route crosses a drainage culvert which has been invaded by coyote bush, dense grasses, willows, and some sedges. To the east, cultivated fields do not contain native vegetation, although a fallow strip at the east side of the field has been invaded by coyote bush and forbs.

Disturbed grasslands with forbs and some coyote bush are scattered throughout the area near the site of the proposed regulating reservoirs and pump station.

Wildlife

Wildlife resources along the proposed export pipeline route are closely correlated with vegetation and existing levels of land-use activities. The most abundant wildlife occurs along the westernmost 1,000 feet of route, while the remainder of the route occupies roadways, road rights-of-way, and cleared vacant lots. The pickleweed marsh in

the last 850 feet of the route occasionally attracts many winter migrant birds when the marsh is flooded by winter rains. Most of these are the typical shorebirds which use the tide lands on the outside of the dikes (e.g., west of the terminus).

The pickleweed marsh is the known habitat of the endangered salt marsh harvest mouse (Reithrodontomys raviventris). The marsh within the route was searched for the harvest mouse or any fecal droppings, but none were found. Numerous rodent droppings and runways in the grass and under coyote bushes were found above the marsh. General vegetation associations would preclude other rare, threatened, or endangered species from the narrow route across the last 1,000 feet east of the terminus of the pipeline.

Raccoons (Procyon lotor), domestic dogs and cats, red-tailed hawks (Buteo jamdicensis), and marsh hawks (Circus cyancus), and probably owls, frequent the general area of the pipeline route in search of mice (Microtus californicus, Peromyscus maniculatus, Reithrodontomys megalotis, and Mus musculus.

GEOLOGY

A detailed description of the geologic conditions along the entire export pipeline route, including the site of the regulating reservoirs and pump station, is contained in the Soil and Geologic Investigation (Harding-Lawson, 1976). The following is a summary of that report.

Soils

The soils encountered in 44 borings taken all along the pipeline route are mostly firm clays, sands, gravels, and weathered, fractured rock, except at the west end of the alignment where soft marine clays occur. Nine test borings in the vicinity of the regulating reservoirs and pump station indicate subsurface conditions consist of uniform, stiff, highly plastic clays to the maximum depth exposed (40 feet). Table 2-3 summarizes the soil conditions to a depth of 8 feet along the proposed route.

The bay mud soils consist of soft, compressible marine clays and silts, usually interlayered with thin sand layers.

The firm natural soils encountered throughout the remaining portion of the route include alluvial and colluvial clays, silts, sands, and gravels which are frequently interlayered to considerable depths, except in the upland areas, where consolidated rock occurs at depths of 5 to 10 feet or less.

Rock encountered at the surface or beneath the firm soils consists of steeply dipping sandstone, siltstone, and mudstone. The rock, in general, is weathered and has low to moderate hardness and strength which usually increases with depth.

Fill consists of man-emplaced soils beneath streets and roadways, in utility trenches, and in areas where the original ground surface has been raised. Fill soils vary from medium stiff to stiff for clays and medium dense to dense for sands.

Groundwater

Throughout most of the pipeline route groundwater encountered in test borings was below the planned pipe invert elevation of 8 feet, thus

stabilized water level readings were not obtained. However, high groundwater is anticipated during average or above average rainfall conditions at six localities along the pipeline route (see Table 2-3).

Table 2-3. AREAS OF ANTICIPATED HIGH GROUNDWATER

AREA	GROUNDWATER DEPTH BELOW GROUND SURFACE (ft)
West end of pipeline, west of Wicks Boulevard	3
Apple Avenue at Locust Street to Foothill Blvd. at Grove Way	2
Crow Creek Crossing between Grove Way & Castro Valley Blvd.	Surface
Eden Creek Crossing, just west of Palo Verde Road	Surface
Devaney Creek Crossing at Dublin Road	Surface
East End of Pipeline, East of I-680, including pump station and regulating reservoirs site	4

Faults

The proposed pipeline route would cross two active fault zones -- the Hayward and Calaveras Fault Zones -- and three minor faults which are not known to be active -- the West Chabot Fault, East Chabot Fault, and the Dublin Fault (see Figures 2-1 2-2 and 2-4).

Within the area of the pipeline crossing of the Hayward Fault there is a well-located trace of ground surface breakage associated with the 1868 earthquake as well as several other traces of past fault movement. The 1868 break occurred near the intersection of Ocean View Drive and Ash Street along the pipeline route (Figure 2-4). The 1868 earthquake is considered one of the five major earthquakes that have struck the Bay Area within the written history of the area. One other major earthquake was associated with the Hayward Fault. This occurred in 1836, but because of the sparse population in the area at that time, the location and nature of ground breakage for that earthquake are not known. The other three major earthquakes were associated with movement along the San Andreas Fault.

In addition to fault rupture during an earthquake, slow, gradual right-lateral movement known as tectonic creep has been observed along portions of the Hayward Fault. However, in the vicinity of the pipeline crossing, no creep has been observed. Thus, this portion of the fault is considered "locked in" until the next earthquake.

The Calaveras Fault, near the eastern end of the pipeline route, is believed responsible for a

strong earthquake in the Dublin area on July 3, 1861 (Figure 2-1). Reports from that time indicate ground breakage occurred on the west side of San Ramon Valley north of Dublin. Right-lateral tectonic creep has been observed in the southern part of the Calaveras Fault between Sunol and Hollister, but directly observable evidence of creep has not been observed in the Dublin area. However, recent geodetic surveys suggest that tectonic movement of very low magnitude is occurring along the northern part of the Calaveras Fault.

ARCHEOLOGICAL AND HISTORICAL RESOURCES

The archeological resources of the proposed pipeline route have been surveyed for surface indications by a field reconnaissance and through review of maps and documents. The field survey for archeological remains (Holman and Chavez, 1976) did not reveal any remains or indications of remains.* However, most of the proposed route lies within streets and roads. The limited section of route without paving lies west of the Southern Pacific Railroad tracks at the west end of Lewelling Boulevard and is either covered by historic land fill or dense pickleweed marsh and grass. Therefore, the absence of surface indications does not confirm the absence of archeological remains below "ground" surface.

Only one recorded archeological site occurs within a quarter mile of the pipeline route along the south side of I-580 and north of Dublin Creek. General occupational trends of California Indians would support the possibility of additional remains along the creek leading to a major pass between the Bay and Livermore Valley. Excluding highly developed and deeply disturbed areas of Hayward and San Leandro and areas of fill and deep cuts of I-580, there are three major areas of high to moderate potential for encountering archeological remains below ground level along the proposed route. These are at Devaney and Dublin Creeks, in the Palomares Creek area, and in the old tidal flats areas at the foot of Lewelling Boulevard (see Figures 2-2, 2-3, and 2-5). The latter is included since the bay-marsh zones have commonly had a high potential for shell mounds and other occupations. These areas have usually subsided somewhat due to oxidation and compaction of the organic rich soils, and during the last three thousand years sea level has risen and covered areas which were inhabitable during the earlier times.

Historic remains were sought during field surveys, although the same hindrances of existing surface uses, fills, and vegetation reduced the potential for finding surface structures or other remains of historic importance. Since the western third of the pipeline passes through an historic "urban" area, the excavation of the pipeline trench (e.g., more than 7 feet below surface) may penetrate previously undisturbed debris from the 1800's.

*In order to protect archeological sites from possible vandalism or disturbance by private collectors, the archeologist's report is only summarized here. Copies of the archeology survey report are on file at the EPA Regional Office in San Francisco, the State Water Resources Control Board in Sacramento, the State Office of Historic Preservation in Sacramento, and at the Treganza Museum of San Francisco State University.

The only known historic site which may be affected by the proposed pipeline is the Roberts Landing (a state historic site, Department of Parks and Recreation, 1976, p. 106). However, deep fills and channeling have altered the area; no remains were visible on the surface of the pipeline route in this vicinity.

SECTION 3
POTENTIAL ENVIRONMENTAL IMPACTS

INTRODUCTION

The discussion in this section is restricted to the direct impacts that could be created by the construction of the proposed export pipeline. All potential impacts of the export pipeline are presented regardless of the fact that most can be properly mitigated. Those impacts that cannot or will not be adequately mitigated are discussed in Section 5.

In most instances, the impacts created by the export pipeline would be temporary, restricted to the actual construction phase of the project. Such impacts include traffic disruption, construction noise and dust, and the temporary displacement of wildlife or the temporary destruction of existing vegetal cover. However, some construction-related impacts would be long-term or permanent. Examples of long-term impacts include consumption of mineral resources, destruction of wildlife and possible disruption of buried archeological or historical remnants.

As mentioned in the Introduction (Section 1), secondary impacts of the entire wastewater management program are discussed in the Draft EIS (November 1975), and the primary impacts of the Livermore Interceptor component of the program are discussed in the Final EIS (August 1976).

LAND USE

During the construction stage of this project, a temporary 65-foot right-of-way would be needed to maneuver construction equipment. In most cases, existing streets would provide adequate space. However, there may be locations where this easement must encompass front yards or front parking lots, and if this is the case, property owners would be compensated for a temporary easement. The project engineers have not yet determined if any specific locations would be affected in this way.

Another impact of the construction of this project would be the necessity to purchase 25-foot-wide easements from the private owners whose properties are crossed by the pipeline (see Section 2, Figures 2-1, 2-3, and 2-5). As these properties are currently vacant, and as there are no immediate plans for the development of these properties, the construction activity would only temporarily impact land use.

Emplacement of the pipeline would not displace any existing structures. The entire pipeline route lies within existing street and road rights-of-way or across vacant land.

TRAFFIC

The pipeline route would cross I-680, I-580, State Highway 17, the Western Pacific Railroad, the Southern Pacific Railroad, and would run along or cross several major arterial routes within the communities of San Leandro, San Lorenzo, Castro Valley, and Pleasanton. Crossings of the Interstate freeways, Highway 17, and the railroads would all be accomplished by boring and jacking or using existing undercrossings, therefore no traffic disruption would result. Construction along streets and roadways is expected to proceed in 1- to 2-block increments. Each increment is expected to disrupt traffic for approximately 1 week.

Major arterial streets along which the pipeline would disrupt traffic are, from east to west, East Castro Valley Boulevard, Grove Way, Foothill Boulevard (Highway 238), Mattox Road, Mission Boulevard (Highway 185), and Lewelling Boulevard. All of these major roadways are presently near or at capacity during peak hours (see Figures 2-3, 2-4, and 2-5).

Traffic disruption at major intersections along the route would be particularly severe especially at peak traffic times. These intersections include, from east to west, Grove Way and Center Street, Grove Way and Redwood Road, Grove Way and Foothill Boulevard, Foothill Boulevard and Apple Street, Mattox Road and Mission Boulevard, Mission Boulevard and Lewelling Boulevard, Lewelling Boulevard and Hesperian Boulevard, Lewelling Boulevard and Washington Avenue, and Lewelling Boulevard and Wicks Boulevard.

Traffic disruption along the streets of the proposed pipeline route would occur as follows:

- Castro Valley Boulevard between Crow Canyon Road and Grove Way. The pipeline emplacement would necessitate closure of at least one, and probably both, eastbound lanes. The peak-hour traffic occurs eastbound in the afternoon, therefore, severe traffic disruption would occur during the afternoon commute period unless corrective measures are taken.

- Grove Way between Castro Valley Boulevard and Foothill Boulevard. Pipeline construction would necessitate closure of the only westbound lane of Grove Way between Redwood Road and Castro Valley Boulevard. A westbound peak occurs in the morning, therefore severe traffic disruption could result unless corrective measures are taken. Between Redwood Road and Foothill Boulevard, the pipeline route shifts to the eastbound lane at Grove Way, necessitating closure of that lane. Severe traffic disruption could therefore result, especially during the afternoon peak hour.

- Foothill Boulevard between Grove and Apple. The pipeline emplacement in Foothill Boulevard would require closure of at least one, if not both, northbound lanes. Although directional peak-hour data were not available, it is probable that the northbound peak is in the morning and the southbound peak in the afternoon. Therefore, the potential exists for severe traffic disruption during the morning peak hour.

- Between Foothill Boulevard and Mattox Road. The pipeline would proceed along several residential streets where traffic disruption is not expected to be a serious problem except for local residents.

- Mattox Road and Mission Boulevard. The initial placement in Mattox Road would require closure of the westbound lanes, disrupting morning and afternoon peak-hour traffic. As the route merges on to Mission Boulevard, it would require closure of the righthand turn lane on Mattox Road, a heavily traveled section during peak hours. The route would probably require closure of both northbound lanes on Mission Boulevard. Such action would disrupt the assumed morning peak-hour traffic.

- Lewelling Boulevard. Between Mission and Hesperian Boulevards, the route would run in the eastbound lane, forcing closure of that lane. This action would severely disrupt the afternoon peak-hour traffic. When the route reaches Hesperian Boulevard, Lewelling Boulevard becomes four lanes. The pipeline route shifts from the eastbound lanes to the westbound lanes at Washington Street. Between Hesperian and Washington, closure of both eastbound lanes would probably be necessary, severely disrupting afternoon peak-hour traffic. To the west of Washington Street, closure of both westbound lanes would probably be necessary, disrupting both morning and afternoon peak-hour traffic.

- Remainder of the Route. From East Castro Valley Boulevard eastward the pipeline would be emplaced almost entirely within the rights-of-way of lightly traveled roads (viz. the southern frontage road along I-580 and Dublin Road in Pleasanton) or open land, therefore no significant traffic impacts would occur. The major exception would be at the proposed crossing of Foothill Road in Pleasanton.

NOISE

Residences along much of the pipeline route are within 50 feet of the roadway and would be exposed to the 84 to 88 dBA noise levels during the construction period. Assuming that people inside residences would be exposed to noise levels that are 15 to 30 dBA less than those levels on the outside, the indoor noise levels should be below the minimum hearing damage risk level of 70 dBA except during unusual circumstances. Indoor noise levels would most likely exceed 60 dBA throughout much of the construction period, however, creating significant speech interference and annoyance.

Schools along the pipeline route would also be adversely affected. Outdoor activities at Laurel School, Baywood School, St. John School, San Lorenzo High School, and Lewelling School would be affected significantly, especially in those areas close to the roadway (see Figures 2-3 and 2-4). School buildings at San Lorenzo High School and Baywood School are within 50 and 100 feet of the construction site, respectively. Indoor noise levels would therefore exceed the 45 dBA limit of moderate speech interference at all times in those buildings close to the roadway, and would probably exceed the 60 dBA level of significant speech interference some of the time. Since the dBA level drops approximately 6 dBA as distance from the source doubles, the other schools should be less affected, although construction noise would most likely be noticeable.

Adverse noise effects would occur only during the construction period. It is estimated that each construction stretch (about 1 to 2 blocks) would take approximately 1 week to complete the heavy work,

therefore that would be the approximate duration of the noise impact. As stated in the mitigating measures section, construction near sensitive receptors would have to be limited to daytime hours.

Noise generated during construction differs from the operational noise of most projects because the character and duration of the noise sources are significantly different. Noise generated by construction activities is normally of short duration but highly variable, therefore it is considered more annoying than a continuous noise level of long duration. Whenever the noise level exceeds 60 dBA, appreciable speech interference occurs. This upper level was established by assuming that noise-induced speech interference would be intolerable for noise levels in excess of 60 dBA. Therefore, the higher noise levels are over 60 dBA, the more disturbance will result and the less steady the level of a noise, the greater will be the distraction and annoyance. Based on this information, construction noise impact criteria for noise-sensitive areas (hospitals, schools, residential communities, recreation areas, etc.) are shown in Table 3-1.

The most prevalent noise sources at construction sites are equipment powered by internal combustion engines. Earthmoving equipment, cranes, concrete mixers, dump trucks, pumps, electric power generators, and air compressors radiate noise levels of 70 to 95 dBA at 50 feet from the equipment. Pumps, generators, and compressors are generally stationary sources which radiate fairly constant noise levels varying noise levels depending on operating conditions and loads. A typical range of noise levels within 50 feet of the site during ground clearing and excavation projects is from 84 to 88 dBA, according to the U.S. Environmental Protection Agency publication, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, 1971.

Table 3-1. CONSTRUCTION NOISE IMPACT DETERMINATION

DURATION OF NOISE (minutes)	NUMBER OF OCCURRENCES PER HOUR OVER 60 dBA		
	LESS THAN 5	5 TO 10	MORE THAN 10
Less Than 1	Small	Moderate	Large
1 to 3	Moderate	Large	Significant
More than 3	Large	Significant	Significant

Source: URS Research Company.

AIR QUALITY

Dust generation is an unavoidable result of construction operations. Most of the pipeline, however, would be constructed on existing paved streets, thus minimizing dust generation since only a minimum amount of earth would be exposed. The only significant segment of the pipeline that would be constructed on open land is between the regulating reservoirs and Foothill Road at the eastern end of the route. Exposed earth and prevailing winds could create a dust problem that would interfere with traffic on I-680 and I-580 if corrective measures are not taken.

Pipeline construction on existing streets would create some temporary dust problems. The nearest sensitive receptors that would be adversely affected are residences along the street. Dust from digging operations and piled dirt could create nuisance conditions at nearby residences. Corrective measures can minimize the effect.

BIOLOGY

Vegetation

Potential impacts of the proposed export pipeline upon vegetation and wildlife are quite low and center primarily on the loss of pickleweed marsh and associated drier habitats adjacent to the marsh at the western end of the pipeline route. Construction and restoration of the pipeline route would probably destroy less than one acre of existing pickleweed marsh, salt grass, and coyote bush-grassland. Although this type of habitat appears highly disturbed and in the Bay Area is quite abundant, across the state, this habitat is rare and continues to disappear. The location of most of the route in this area would be within areas of existing fills above 5 feet above sea level. Construction throughout the remainder of the pipeline would not affect vegetation to any significant degree.

The impacts of the proposed pipeline upon the biota should be viewed in relationship to the overall proposed development for the area extending from the existing west end of Lewelling Boulevard. The proposed EDA-funded Project No. 9 would extend Lewelling Boulevard 2,800 feet to the west, through the area of pickleweed marsh. If this project is implemented the effects of the pipeline construction would be less important. The pipeline effects then become a matter as to the loss of vegetation productivity from the time of construction for the pipeline to that of the roadway.

Wildlife

Based upon surveys of the pipeline route, little if any direct damage to wildlife would occur along the entire pipeline. Construction activities and vegetation losses in the marsh area near the western terminus of the route would dislocate birds and some mammals. Some rodents would be destroyed, and some individuals of the endangered salt marsh harvest mouse may be threatened, however, based on review of California Department of Fish and Game (CDFG) habitat maps and discussion with CDFG personnel, the likelihood of encountering this endangered species would appear to be slight.

Normal operational aspects of the proposed pipeline would have virtually no adverse effects upon either vegetation or wildlife. Possible spillage of treated effluent along most of the route would enter the storm sewer systems or creeks. Spillage in the marsh area would flood the marsh area to the south of the pipeline. This event would probably resemble the effects of the winter rain flooding of the marsh. Repair of the pipeline leak or break would repeat the same effects upon the restored vegetation along the pipeline (e.g., generally grasses, weedy forbs, and some coyote bush).

GEOLOGY/MINERAL RESOURCES

In discussing the geologic problems associated with the construction and operation of the proposed

export pipeline, a distinction is made between geologic hazards or limitations and geologic impacts. Geologic hazards and limitations refer to those aspects of the existing geological environment that could have impacts on the proposed project if they are not recognized and planned for in the design and construction of the project. In contrast, geologic impacts refer to the potential changes the project would incur on the existing geologic conditions along the pipeline route.

Geologic Hazards

According to the soil and geologic investigation for the export pipeline, the potential hazards or limitations created by the geologic conditions along the pipeline route include fault displacement, hydrostatic uplift in areas of high groundwater, expansive soils, trench wall instability, soil settlement, and excavation difficulties (Harding-Lawson, 1976).

Fault Displacement. As discussed earlier in Section 2, the pipeline would cross the Hayward and Calaveras Faults. Both of these faults are considered active and capable of horizontal (right-lateral) displacement during an earthquake. Such fault movement could cause the buried pipeline to rupture or crack. The potential impacts created by a pipeline leak or rupture are discussed later under Geologic Impacts.

Hydrostatic Uplift. Uplift pressure created by rising groundwater beneath the proposed pipeline and appurtenant facilities could be great enough to displace the pipe or structures upward, causing damage. As was discussed in Section 2, the groundwater level throughout most of the pipeline route is expected to be below a depth of 8 feet (the proposed pipe invert). However, as indicated in Table 2-3, several areas along the project route exhibit shallow water table conditions. The weight of the compacted trench backfill in general would offset the uplift pressure, but in areas of natural channel stream crossings, special backfill procedures would be needed to overcome the hydrostatic uplift.

Expansive Soils. Clay soils that have a high shrink-swell potential occur at the eastern and western ends of the pipeline route. These soils contain a clay mineral that expands in volume when moisture is added to it only to shrink back to its original volume as it dries out. Rigid structures such as pavement, foundation slabs, etc., that are placed on these soils without proper site preparation or structural design will be subject to heaving and cracking as the soil expands each rainy season, or period of high groundwater, and shrinks each dry season.

Expansive soils offer the greatest problem at the eastern end of the pipeline route in the vicinity of the proposed pump station and regulating reservoirs. Special design measures will be required to protect the shallow foundations and slabs from the detrimental effects of the shrinking and swelling. Similarly, if a rigid lining is used for the reservoirs, it would be subject to cracking from expansive soil unless protective measures are employed.

Trench Wall Instability. Some trench wall instability problems can be expected in the urban areas of Castro Valley and San Leandro where deep alluvial soils exist and where vertical trench walls would be required in order to limit the

width of the open trench and thus limit traffic disruption. Other potential problem areas occur at stream crossings where groundwater seepage would cause sandy soil to "run" unless the area is dewatered or continuous sheeting is used. In general, trench wall stability problems can be overcome by lessening the slope of the trench walls where space permits or by bracing or sheeting in areas where vertical side walls are necessitated.

Soil Settlement. The bay mud located at the western end of the pipeline route (west of Wicks Boulevard) is low in strength and highly compressible. Thus, these soils would be susceptible to compaction when additional loads (e.g., pipeline backfill, construction fill, and the weight of construction equipment) are added on them. Bay mud typically has a desiccated crust 3 to 4 feet thick which, during the dry season, will support moderate weight construction equipment. However, during the wet season, the crust becomes softened and loses this supporting capacity.

Excavation Difficulties. Most of the excavation for the pipeline would be accomplished with conventional earthmoving equipment, however, some localized areas of shallow rock in the vicinity of Apple Avenue and Ocean View Drive, along East Castro Valley Boulevard, and along the I-580 frontage road segment may require heavy ripping or blasting. In addition, a dragline or clamshell might be needed to excavate the soft bay mud.

Geologic Impacts

Geologic impacts that could be created by the construction and operation of the proposed export pipeline include induced soil compaction, increased erosion, seepage at regulating reservoirs, consumption of mineral resources, loss of topsoil, and disposal of excavated soils.

Soil Compaction. As was mentioned earlier, the soft clay soils, or bay mud, at the western end of the pipeline route are highly compressible. Thus, the extra weight of fill that would be required to support construction equipment would result in compaction of the underlying soils and settlement of the ground surface. However, since the extension of Lewelling Boulevard parallel to the pipeline route just to the north is being considered by the City of San Leandro, the potential impact caused by the construction of the pipeline would be a moot point if the Lewelling Boulevard extension is completed before the pipeline. The construction of the Lewelling Boulevard extension would not only cause but would actually require the underlying sediment to be compacted prior to the emplacement of the street surface.

Increased Erosion. Exposed earth created by excavation in and near drainage channels and in areas of slope would result in increased erosion and off-site siltation especially during the rainy season. Areas of highest potential for increased erosion during construction activities include the upland portion of the route (along East Castro Valley Boulevard and the southern frontage road of I-580) in general, and at the crossings of natural streams (Crow Creek, Eden Creek, and Devaney Creek).

Increased erosion could also occur during the operation of the export pipeline. Ruptures or leaks in the pipeline could result in underground erosion with possible damage to adjacent roadbeds. Additional

erosion of the slopes of the regulating reservoirs would occur, particularly during maintenance operations if the reservoirs are not lined.

Seepage at Reservoirs. Seepage of treated effluent could occur through the bottom and sides of the regulating reservoirs if they are not lined or if cracks develop in the lining. However, the volume of seepage would be small because of the low permeability of the natural clay soils at the site and because the highest normal reservoir operating level (elevation 324.5 feet) is nearly at the lowest groundwater level (elevation 312.5 feet) expected during a dry year.

Consumption of Mineral Resources. Sand and gravel would be required as pipe bedding material and trench backfill. For impact evaluation purposes, it is assumed that imported fill material would be required for the entire pipeline route. However, some of the excavated soils would probably be suitable for fill, provided the appropriate county or city backfill compaction requirements are adhered to. Final bedding and backfill requirements will have to be evaluated when the type of pipe has been determined. In general, pipeline bedding material would consist of a thin layer of gravel or crushed rock. Imported trench backfill would consist of sandy or granular material that would meet relative compaction requirements.

Various other mineral resources would be consumed in the fabrication of materials and construction of appurtenant facilities for the export pipeline system. The 19,300 feet of force main and the 62,100 feet of gravity-flow pipeline would be constructed out of ductile iron, concrete cylinder pipe (cement mortar lined and coated steel cylinder pipe), or asbestos cement pipe. In addition, steel pipe would be used at the pump station discharge manifold where sharp transitions and unique pipe lengths are required.

Asphalt and aggregate for roadbase would be consumed in the construction of an entrance road and access road around the regulating reservoirs and pump station. Asphalt concrete or reinforced concrete would be required as a reservoir liner. Steel would be consumed for fencing, and surge tanks. Various metals would be consumed for pumps and valves, and for the construction of the pump station building.

Disposal of Spoils. Although part of the organic soils excavated for the pipeline trench could be stockpiled and used as topsoil cover, other unsuitable material would have to be disposed of away from the construction site. Ultimate disposal of this material would be determined at the time of construction. Much of it may be suitable as fill at construction sites where the compaction requirements are not as stringent as for utility line backfill in urban areas. Other organic or clay soils of high moisture content would probably have to be disposed of at a sanitary landfill.

ARCHEOLOGY AND HISTORICAL SITES

The absence of any surface indications and the generally disturbed character of the pipeline route reduce the potential for encountering important archeological remains. However, the presence of one known site and the general trends

of human habitation in the area indicate that some potential for subsurface disturbance may yet exist in certain portions of the route.

The proposed project pipeline does not pass through any potential or currently registered site or landmark structure under state or federal protection. The Roberts Landing site in the area of the western terminus of the pipeline generally lies to the south of the pipeline route. However, excavations in the urban areas may penetrate buried historic remains and portions of the Roberts Landing facilities and associated remains may be encountered in the area west of the Southern Pacific Railroad tracks and the end of Lewelling Boulevard.

These possible disturbances of archeological and historic remains are adverse effects if they either destroy the remains or the context of the remains. However, with proper monitoring of the excavations in several areas and proper controlled excavation and removal of the remains, the 3- to 4-foot wide trench may provide substantial information regarding the location and content of subsurface archeological site and historic foundation and other associated remains.

The planned EBDA Interceptor to which the proposed pipeline would connect would also pass directly across the Roberts Landing site and may similarly either produce adverse effects if the excavation is uncontrolled or substantial benefits if archeological and historic remains are properly documented and/or removed for preservation.

SECTION 4
MITIGATION MEASURES

INTRODUCTION

The following discussion lists those mitigation measures that have been agreed upon by EPA, SWRCB, and LAVWMA. These measures would be incorporated as Step 3 (construction phase) grant conditions and would be written into construction plans and specifications. These mitigation measures apply to the potential primary impacts associated with the construction and operation of the proposed LAVWMA export pipeline. Mitigation measures adopted for the construction and operation of the Livermore Interceptor component of the LAVWMA program were presented in the Final EIS.

Proposed measures to mitigate potential secondary impacts associated with the entire wastewater management program were presented in Section 4 of the Draft EIS. The feasibility of implementing these secondary impact mitigation measures was discussed in Section 5 of the Final EIS. Resolutions adopted by the members of LAVWMA, (City of Livermore, City of Pleasanton, and the Valley Community Services District) with regard to their role and position in the development of an Air Quality Maintenance plan are presented in Appendix C.

LAND USE

The potential impact of the temporary 65-foot construction right-of-way on the front yards or parking lots of private landowners would be mitigated by the compensation of the landowners for the temporary easement. Similarly, the landowners of private properties traversed by the pipeline would be compensated for permanent 25-foot easements that would be required. Careful construction techniques and clean-up operations would be utilized to retain the current character of the lands crossed.

TRAFFIC

Before the California Department of Transportation (Caltrans), the County of Alameda, the City of San Leandro, and the City of Pleasanton issue construction permits, they will define specific mitigating measures that will have to be implemented in order to minimize traffic disruption. Possible measures include limiting the construction period to off-peak traffic hours in the peak traffic direction, closure of as few lanes as possible, particularly during peak hours, night

construction in non-residential areas, traffic control procedures (detours and/or flagmen), limiting the length of roadway affected at any one time (e.g., Alameda County requires no more than 600 feet of open trench), limiting the season of construction (e.g., avoiding peak holiday season traffic), and boring and jacking under critical traffic areas. The following measures, at a minimum, would be taken on specific roadways:

- East Castro Valley Boulevard between Crow Canyon Road and Grove Way. Construction would occur at times other than the afternoon peak hour. During the afternoon peak, at least two eastbound lanes would be kept open.

- Grove Way. On Grove Way from East Castro Valley Boulevard to Redwood Road construction should avoid the morning peak hour. During both the morning and afternoon peak hours, two lanes would be kept open to handle both directions of traffic. There is probably enough room on the shoulder to provide for two lanes of traffic temporarily. On Grove Way between Redwood Road and Foothill Boulevard, construction during both peak hours would be avoided, and two lanes would be kept open if at all possible during peak hours. During daytime off-peak hours, flagmen will probably be necessary for traffic control, since few, if any, convenient detours exist.

- Foothill Boulevard. Construction on Foothill Boulevard would avoid the morning peak hour. At least two lanes would be kept open for northbound traffic in the morning and southbound traffic in the afternoon. At least one lane would be kept open in each direction at all times.

- Mattox Road. Construction on Mattox Road would avoid both peak hours. During peak hours, at least two lanes of traffic would be kept open.

- Mission Boulevard. Construction on Mission Boulevard would avoid both morning and afternoon peak hours. Two lanes of traffic would be kept open in the peak direction (northbound in the morning, southbound in the afternoon) during peak hours. At least one lane would be kept open in each direction at all times.

- Lewelling Boulevard. Construction on Lewelling between Mission and Hesparian would avoid both peak hours. During peak hours, two-way traffic would be allowed for. There are few convenient detour routes available, therefore during the construction period flagmen may be necessary to regulate traffic on the one remaining lane. Between Hesparian and Washington, construction would be avoided during the afternoon peak hour, and at least two eastbound lanes would be kept open during the afternoon peak. To the west of Washington Street, one lane in each direction would be kept open at all times. Traffic west of Washington becomes light enough to allow construction during peak hours.

Construction in the major intersections noted in the impact discussion (Section 3) would require special attention. The least disruptive construction method would be boring and jacking under the intersection, however, the large cost of this measure makes its use feasible in only severe traffic situations. The City of San Leandro and Alameda

County suggest that this measure may be necessary at Lewelling and Washington, and Lewelling and Hesparian. In non-residential areas, a feasible measure to minimize the disruption of traffic at intersections would be to limit construction to the nighttime hours. Closure of even part of major intersections during daylight hours would be a very disruptive procedure and should be avoided if at all possible.

Construction along I-580 through Dublin Canyon would proceed on a to-be-constructed service road along I-580. Impacts would be minimized if road and pipeline construction could be coordinated.

CONSTRUCTION NOISE

Noise disruption would be mitigated by the following construction practices:

- Recognition of sensitive areas (residential areas along East Castro Valley Boulevard, Grove Way, Apple Street, Ocean View Drive, Birch Street, and Lewelling Drive, and Laurel School, Baywood School, St. John School, San Lorenzo High School, and Lewelling School).

- Avoidance of excessively noisy equipment (e.g., two-cycle diesel engines).

- Equipping and maintaining all vehicle and equipment engine mufflers.

- Use of extra, temporary engine mufflers in the vicinity of the sensitive receptors mentioned.

- Limiting construction to daytime working hours in the vicinity of the sensitive residential areas mentioned above.

- Use of portable noise shields in residential area and near sensitive school sites if necessary to limit noise to a maximum of 86 db(A) at 50 feet from the construction site.

- Federal and State noise regulations for protection of workers will be met.

AIR QUALITY

Dust generation can best be avoided and mitigated by:

- Watering all exposed earth.

- Limiting the length of pipeline under construction at any one time.

- Avoiding activity on extremely dry, windy days.

BIOLOGICAL RESOURCES

Mitigation of the impacts of the proposed route on the small area of salt marsh at the western end of the pipeline would be accomplished by regrading the finished cover of the pipeline trench and surrounding areas that might be disturbed by construction equipment to that of the surrounding marsh. Careful removal of the upper foot of soil and pickleweed vegetation where it exists, and stockpiling this material to the north side of the route, would allow the natural revegetation of the existing

pickleweed plants over the construction area. Any stockpiled marsh vegetation would be kept moist, and would be replaced as quickly as possible. The CDFG, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers have all been contacted with regard to required permits and approval of mitigation measures.

Potential adverse impacts at creek crossings (Dublin, Devaney, and Crow creeks), would be mitigated by adhering to mitigation measures agreed to by the contractor and the California Department of Fish and Game (CDFG). Pursuant to the California Fish and Game Code, sections 1601-1603, LAVWMA's engineer has contacted CDFG regarding stream crossings and the appropriate agreements for mitigating potential impacts have been established.

Much of the potential impact on the salt marsh at the western end of the pipeline route has been mitigated by realigning the route northward about 100 feet so that the trench would be excavated in existing fill of an unimproved road. Nevertheless, a permit from the Army Corps of Engineers, Regulatory Function Branch would be required for construction within the salt marsh. This permit would insure that spoils developed by the pipeline trenching would not be deposited within the salt marsh. Additionally, since the salt marsh is the habitat of the endangered salt marsh harvest mouse (Reithrodontomys rauiventris), the CDFG and the U.S. Fish and Wildlife Service have been contacted and mitigation measures such as trapping with release elsewhere would be used if an individual of the salt marsh harvest mouse should be threatened.

GEOLOGY AND MINERAL RESOURCES

In general, the best approach to insuring that potential geologic hazards and impacts are either avoided or minimized is to have a licensed soils engineer or engineering geologist present during construction activities in order to inspect the trenching and backfilling operations, and the installation of foundations and subdrains. These field inspections will permit the detection of variations in soil conditions that may require modifications of design. Also, field and laboratory tests would be conducted during construction to evaluate the quality of workmanship and materials used.

Fault Displacement

In order to minimize the damage to the pipeline should movement occur along the Hayward or Calaveras faults, the following pipeline designs are recommended in the Harding-Lawson Soil and Geologic Investigation.

- Within the two potentially active fault zones, the pipe would be made as flexible as possible. One way of accomplishing this is to use short lengths of pipe (preferably two or three times the diameter).

- It is also suggested that consideration be given to widening the trench and using a compressible backfill within the fault zones.

- A registered geologist or engineering geologist would be present during trenching activities in fault zones in order to more precisely locate fault traces.

Trench-Wall Instability

Throughout the urban areas of the pipeline where vertical trench walls would be required to minimize traffic disruption, the use of normal safety shoring or bracing would be used to prevent possible trench-wall failure. Continuous sheeting would probably be required at creek crossings and other areas of high groundwater in order to control caving as well as groundwater infiltration into the working trench. Dewatering of the trench in areas of high groundwater would also reduce the risk of caving, facilitate construction, and permit better pipeline inspection. In open areas of the pipeline route where the width of excavation is not a restraint, trench walls could be sloped at a lesser angle to prevent slope failure. Actual slope angles would be determined by the contractor based on his experience and the conditions exposed in the field.

Hydrostatic Uplift

Resistance to hydrostatic uplift pressures on the pipeline in areas of high groundwater would be accomplished by adding extra weight in the form of a concrete cover, increasing the pipeline depth, or by using tie-down straps.

Hydrostatic pressure beneath the proposed inlet and outlet structures at the pump station site would be overcome by providing wings (extended footings) at the bottom of the structure or by providing wall backdrains and pressure relief valves in the walls of the structures.

Hydrostatic uplift on the regulating reservoirs would be controlled by providing a subdrain system beneath the reservoir bottom and along the sides. As an alternative, pressure relief valves would be provided in the reservoir lining to relieve groundwater pressures.

Consumption of Mineral Resources

Consumption of sand and gravel or crushed rock for trench backfill would be minimized by using excavated material wherever possible. The consumption of most other mineral resources is considered unavoidable.

Expansive Soils

All foundations and slabs above the water table at the site of the pump station and regulating reservoirs will need protection from expansive soils. The risk of damage from the expansive clays would be reduced by preparing the soils to resist shrink-swell or by designing the slabs or foundations to resist the uneven pressures created by expansive soils. Cracking of a nonflexible reservoir lining would be prevented by placing low-expansion potential fill beneath the reservoir lining.

ARCHEOLOGICAL/HISTORICAL RESOURCES

To minimize potential adverse impacts on unknown buried archeological remains in the Dublin Road to the LAVWMA export pump station portion of the main pipeline and in the general vicinity of Palomares

Creek, these areas would be monitored by a qualified archeologist. If any remains are encountered the archeologist would designate areas for further investigation and excavation by hand or carefully controlled backhoe. As experience in other projects, such monitoring does not slow the overall project.

The area west of the west end of Lewelling Boulevard would also be monitored by a qualified archeologist. However, since the proposed route has been realigned northward through the existing deeper fill along the existing unimproved road, the potential for disturbing buried archeologic and historic remains has been reduced considerably. If any indications of archeologic or historic remains are uncovered during construction activities a qualified archeologist would be notified to make an inspection. Costs necessitated by the archeologist's presence and any ensuing work required would be grant fundable.

SECTION 5
CONCLUSION

As a result of the environmental analysis of the proposed export pipeline and alternatives, EPA concludes that the proposed project is environmentally sound and therefore proposes to offer grant assistance in the amount of 75 percent of eligible project costs, as determined by the SWRCB. Similarly, the SWRCB concludes that the proposed project is the most cost-effective solution to the watewater effluent problem, and proposes to offer grant assistance in the amount of 12 1/2 percent of eligible project costs. The SWRCB has previously affirmed its decision that project is the most cost-effective by approving Step 2 (design phase) grant of the Clean Water Grant Program.

In most instances, unavoidable impacts created by the export pipeline would be temporary and restricted to the actual construction phase of the project. Such impacts include traffic disruption, construction noise and dust, and the temporary displacement of wildlife or the temporary destruction of existing vegetal cover. However, some construction-related impacts would be long-term or permanent. Examples of long-term impacts include consumption of mineral resources and energy, destruction of wildlife and possible disruption of buried archeological and historical remnants.

With the exception of mineral resource and energy consumption, the above impacts can be reduced to relatively minor levels by adherence to the adopted mitigation measures.

Secondary impacts associated with increased population growth that could be accommodated by the proposed wastewater management program would be unavoidable. However, EPA believes the Air Quality Maintenance Planning process and ongoing local planning efforts will reduce the severity of these impacts. EPA believes the members of LAVWMA have shown good faith in their efforts to mitigate all impacts identified in the Draft EIS, Final EIS, and in this supplement.

APPENDICES

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APPENDIX A

ENVIRONMENTAL ASSESSMENT OF ADDITIONAL WASTEWATER MANAGEMENT ALTERNATIVES

PROPOSED WASTEWATER MANAGEMENT PROGRAM

LIVERMORE-AMADOR VALLEY, ALAMEDA COUNTY, CALIFORNIA

AUGUST 1977

Prepared by:

URS COMPANY
155 Bovet Road
San Mateo, California 94402

APPENDIX A

SECTION 1
INTRODUCTION

PROJECT BACKGROUND

This report is the result of the Livermore-Amador Valley Water Management Agency (LAVWMA) Board's desire to investigate additional wastewater management alternatives. Although the full EIR/EIS process has been completed for a LAVWMA wastewater management program, the voters' rejection of a local ballot bond measure for this project in November 1976, subsequent public opposition to the selected project, and the concern over potential increases in operating costs have prompted LAVWMA to authorize an investigation of two new alternatives. These two alternatives are an effluent pipeline to a Suisun Bay discharge and an effluent pipeline through Niles Canyon to a connection with the planned East Bay Dischargers Authority (EBDA) force main at Alvarado. In addition, LAVWMA decided to authorize a more detailed investigation of a previously rejected alternative -- an effluent pipeline to a South San Francisco Bay outfall -- since the same pipeline route from the Valley Community Services District (VCSD) treatment plant through Niles Canyon would be used as in the proposed EBDA Connection alternative.

The most prevalent concern with the Boehmer Summit Pipeline (the "selected project") is the consumption of electrical energy to pump the effluent from the VCSD pumping station to Boehmer Summit. Although there is considerable public opposition to wastewater management alternatives that involve exporting treated effluent out of the valley, the LAVWMA Board has decided that any plan designed for 100 percent local disposal and reuse would not offer the necessary flexibility should such a system prove detrimental to the valley's groundwater. Thus, it was determined that the best means of meeting the current state discharge requirements and preserving the valley's groundwater quality was some sort of effluent export system. Such a system would allow LAVWMA to continue to explore reclamation and reuse of the valley's effluent; when technology is improved such that reclamation and reuse becomes more viable, a combined effluent export and reuse system could be used.

Reclamation and reuse are considered as part of the alternatives under investigation. Because of legal restrictions on land disposal of wastewater effluent, the reclamation and reuse system is presently reserved as an auxiliary option. Further

studies regarding reclamation and reuse will be conducted by LAVWMA. If agricultural and landscape irrigation continues to be properly managed, and local reuse of treated wastewater increases in the future, the amount of effluent that needs to be removed from the valley would be greatly reduced. Such a reduction of effluent would, in turn, reduce pumping requirements and energy consumption.

HISTORY OF THE EIR/EIS PROCESS TO DATE

The LAVWMA Draft Environmental Impact Statement was published in November 1975. The Draft EIS contains an environmental inventory of the LAVWMA study area (defined as the Alameda Creek watershed above Niles) and an environmental impact evaluation of each of the 7 viable alternatives that had been screened from a list of 15 alternatives by the LAVWMA Board. The principal tasks of the Draft EIS were to (1) evaluate the seven wastewater management alternatives to determine the most environmentally acceptable one and (2) address the secondary environmental effects related to an upgraded and expanded wastewater management system, particularly with regard to future air quality in the Livermore-Amador Valley. The Draft EIS concluded that Alternative 1B -- an effluent pipeline across Boehmer Summit (I-580) to a connection with the planned EBDA force main at the Ora Loma-Castro Valley pumping station -- was the most environmentally acceptable alternative. In addition, the Draft EIS concluded that any of the viable alternatives, by accommodating population growth within the valley, would lead to continued air quality degradation because of increased vehicular traffic.

Following a period of public review and a public hearing on the DEIS, the Final EIS was published in August 1976. The Final EIS contains responses to public comments received during the public review and the public hearing as well as a more detailed environmental impact evaluation of the Livermore Interceptor Pipeline component of the LAVWMA wastewater management program. The Livermore Interceptor would consist of a pipeline from the Livermore Treatment Plant to the VCSD treatment plant. A more detailed, site specific impact evaluation of the Livermore Interceptor was included in the Final EIS since right-of-way engineering design for that component of the wastewater program was not completed until that time.

Upon completion of more detailed engineering right-of-way designs for the remaining portion of the selected project (i.e., from the VCSD pumping station to the EBDA Interceptor), a more detailed environmental impact analysis for that segment was conducted. A preliminary draft of that study was completed in December 1976. This report was to be published as an addendum to the Final EIS; however, before the report was completed, the LAVWMA ballot bond issue was defeated and a significant error in project design and construction cost was discovered. Following a cost re-evaluation of the seven viable alternatives by a new engineering consultant, the selected project was still determined as the most cost-effective. As a result of comments received from the public, however, the LAVWMA Board decided to include two additional alternatives for engineering and environmental evaluation. These alternatives are the Suisun Bay Discharge and a Niles Canyon-EBDA

Connection. In addition, Alternative 1A (South Bay Discharge), even though it had been previously rejected, was added to the evaluation because of the common component of a Niles Canyon Pipeline.

DESCRIPTION OF ALTERNATIVES

According to preliminary design and cost work being conducted by CH2M-Hill, the pipeline alignments of the various alternatives are as shown in Figures 1-1 through 1-18. The environmental evaluation assumes that the pipeline would have an inside diameter of 30 inches throughout the length of each route. The excavated trench would measure approximately 4 feet wide by 6 to 8 feet deep. The width of the construction corridor or the zone of disturbance would be approximately 25 feet. A comparison of the pipeline lengths and elevation differences along each of the alternative routes is shown in Table 1-1.

Suisun Bay Discharge

An export pipeline proceeding northward from the VCSD treatment plant to an outfall in Suisun Bay became a potentially viable alternative when it was learned that construction within an existing Southern Pacific (SP) Railroad right-of-way was possible. Although this pipeline would be nearly twice the length of the previously selected project, the apparent availability of the SP right-of-way would greatly facilitate construction and presumably minimize construction-related environmental impacts. Elevations along the route would range from 300 feet above sea level at the VCSD pumping station to a maximum of about 470 feet near San Ramon and a minimum of a few feet below sea level at the outfall in Suisun Bay.

According to preliminary engineering design and cost work, the pipeline would be aligned as shown in the route maps (Figures 1-4 through 1-10). After reaching the SP right-of-way at the I-580 underpass, the pipeline would be placed on the east side of the SP tracks. The pipeline would remain on the east side of the tracks for as long as possible; when it enters the more urbanized areas in the vicinity of Danville, however, the pipeline may necessarily cross the tracks several times because of a more restricted right-of-way and potential land-use conflicts with an SP fuel line. The exact location of these cross-overs is not known at this stage of the engineering investigation.

The pipeline would remain within the SP right-of-way through the communities of Danville, Alamo, Walnut Creek, Pleasant Hill, and Concord. At the northern end of Buchanan Field, the pipeline would leave the right-of-way and parallel the west side of Solano Way for a short distance to State Highway 4. The pipeline would turn and follow the southern right-of-way of the highway, on the northern boundary of Buchanan Field, for approximately 1 mile to a point opposite the Central Contra Costa (CCC) Sanitary District treatment plant property.

This evaluation assumes that LAVWMA would be able to make arrangements with the CCC Sanitary District to connect with their outfall pipeline without going through the treatment plant (since the LAVWMA effluent is secondarily treated). If for some reason LAVWMA cannot connect directly to the existing CCC Sanitary District outfall, a separate outfall pipeline would have to be constructed by LAVWMA (see Figure 1-7).

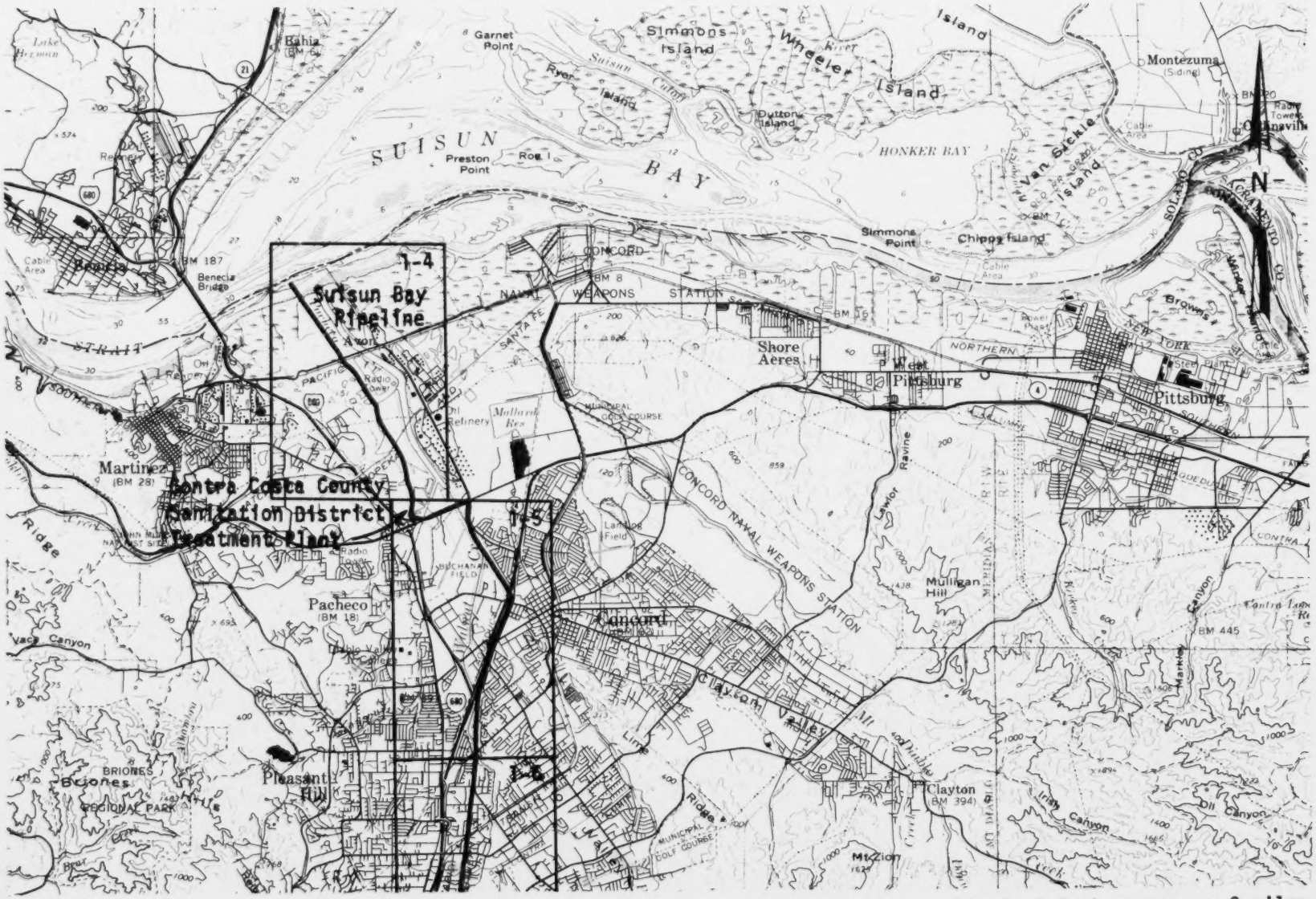
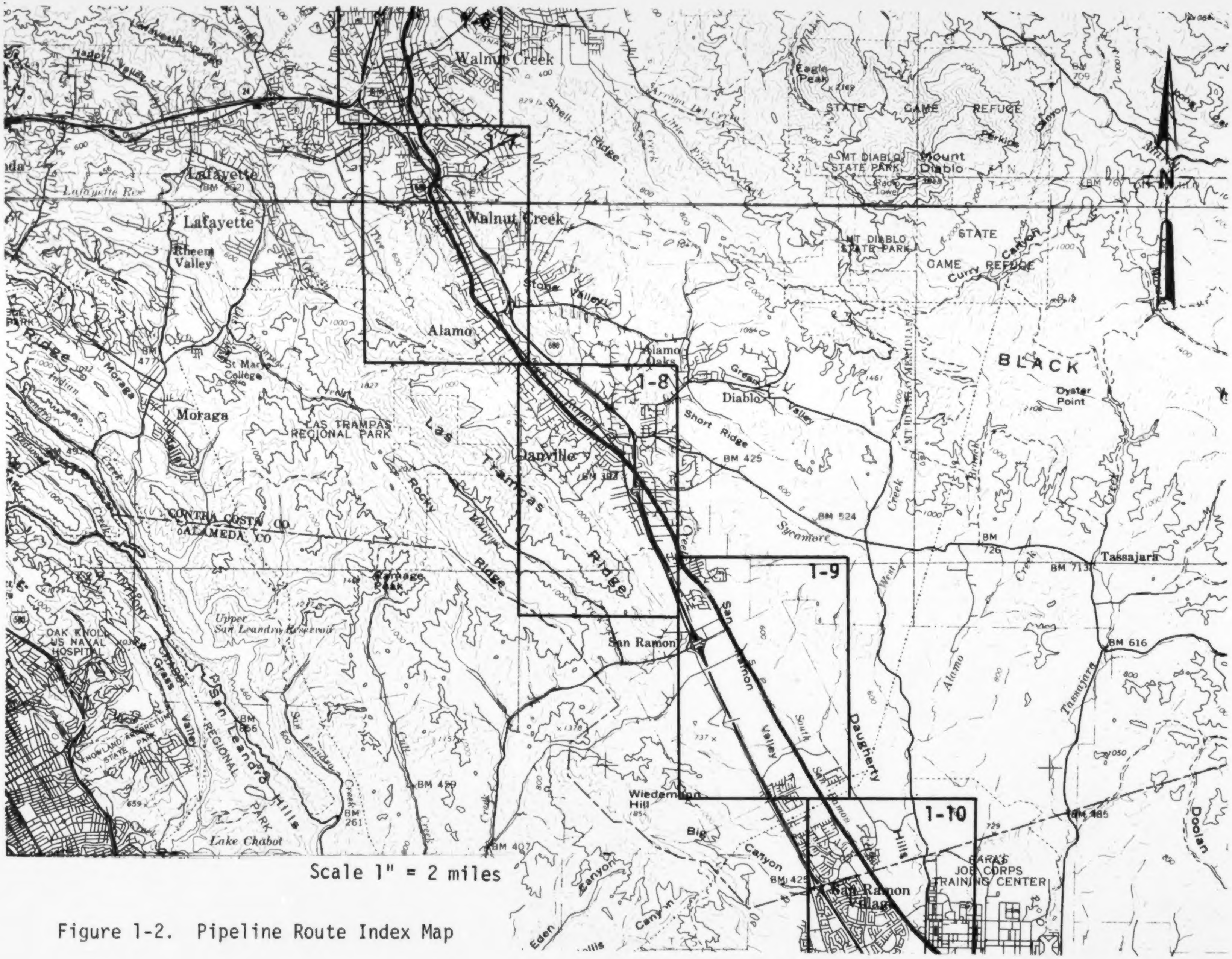


Figure 1-1. Pipeline Route Index Map



Scale 1" = 2 miles

Figure 1-2. Pipeline Route Index Map

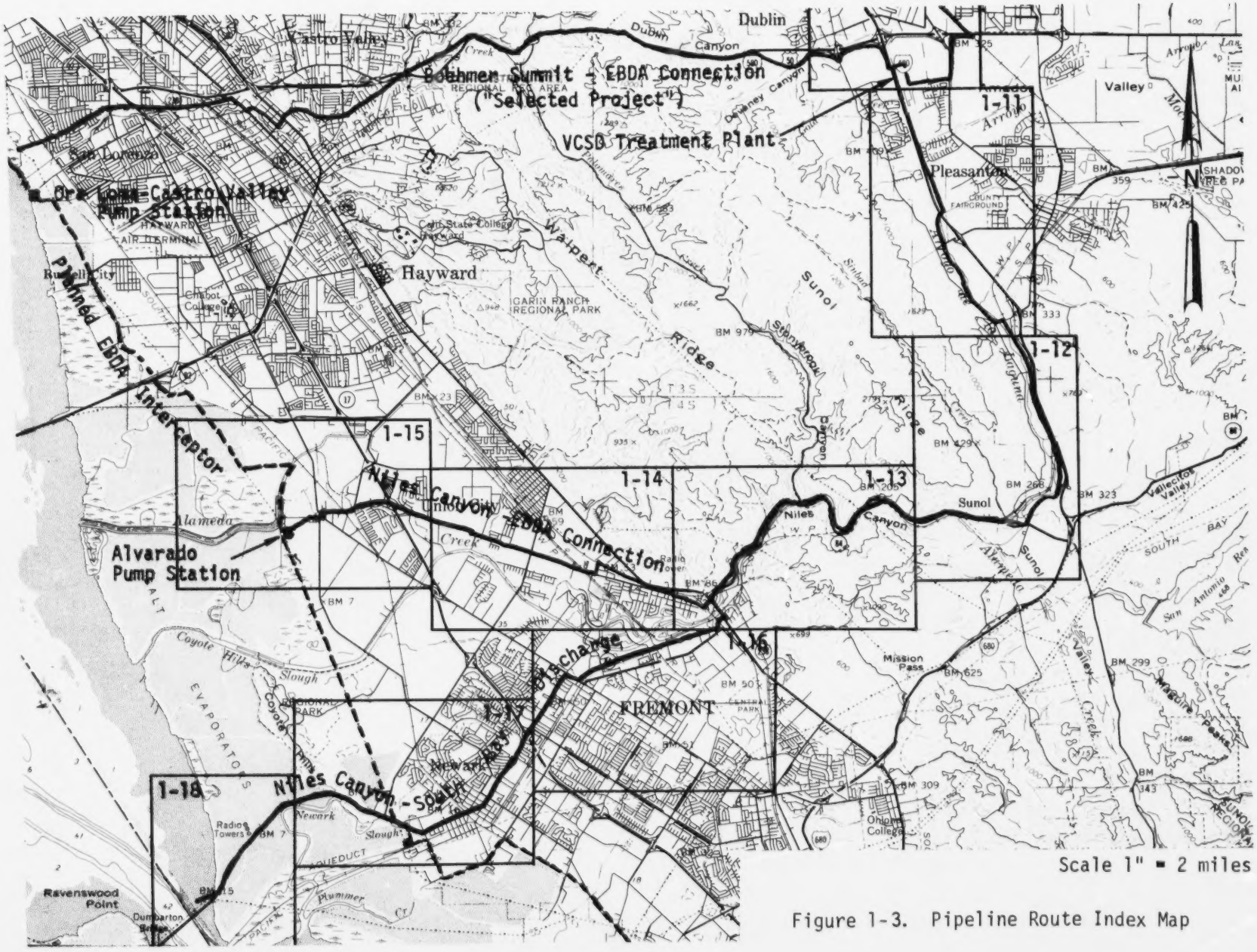
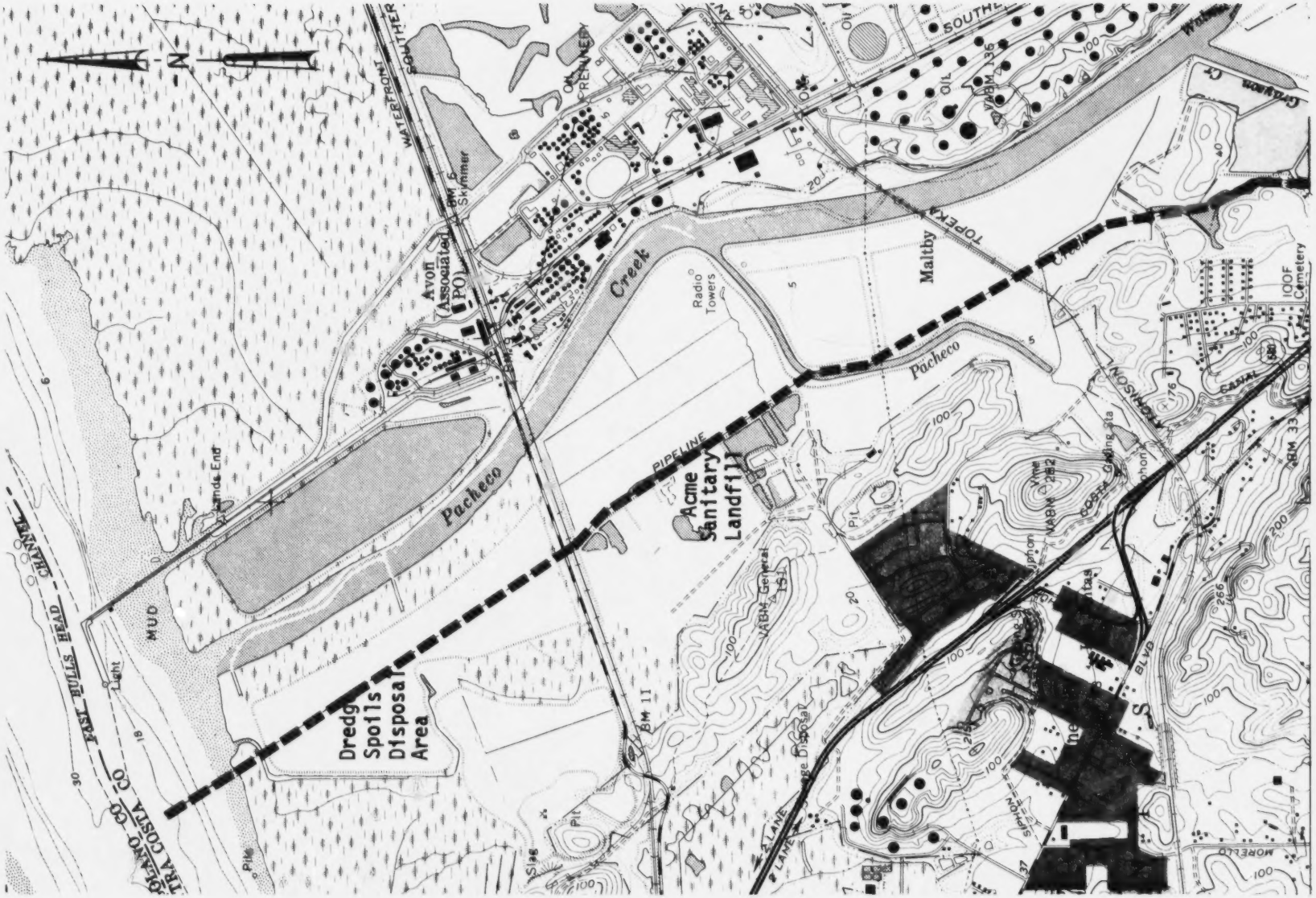


Figure 1-3. Pipeline Route Index Map



Scale 1 inch = 2,000 feet

Figure 1-4. Pipeline Route - Suisun Bay Discharge

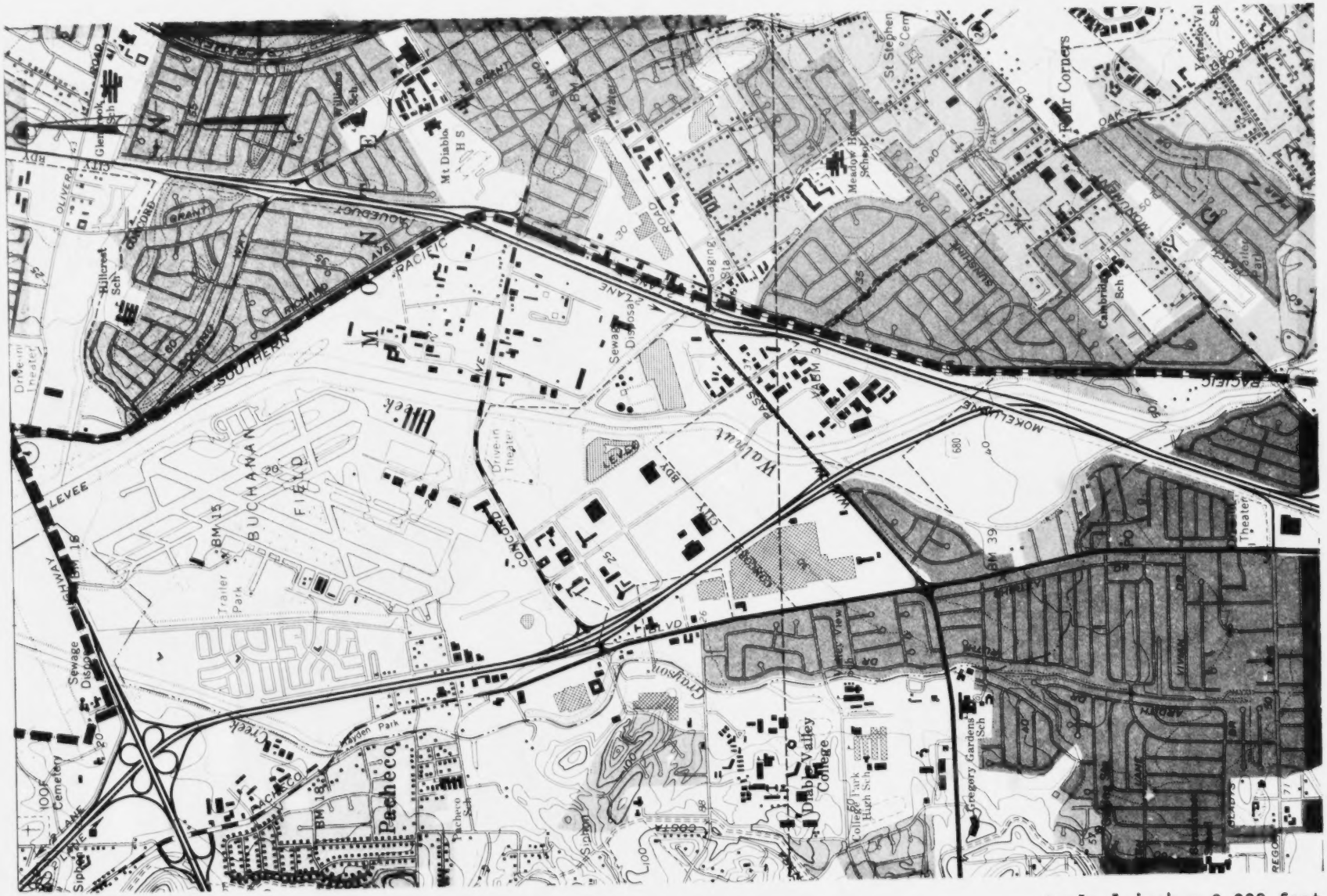
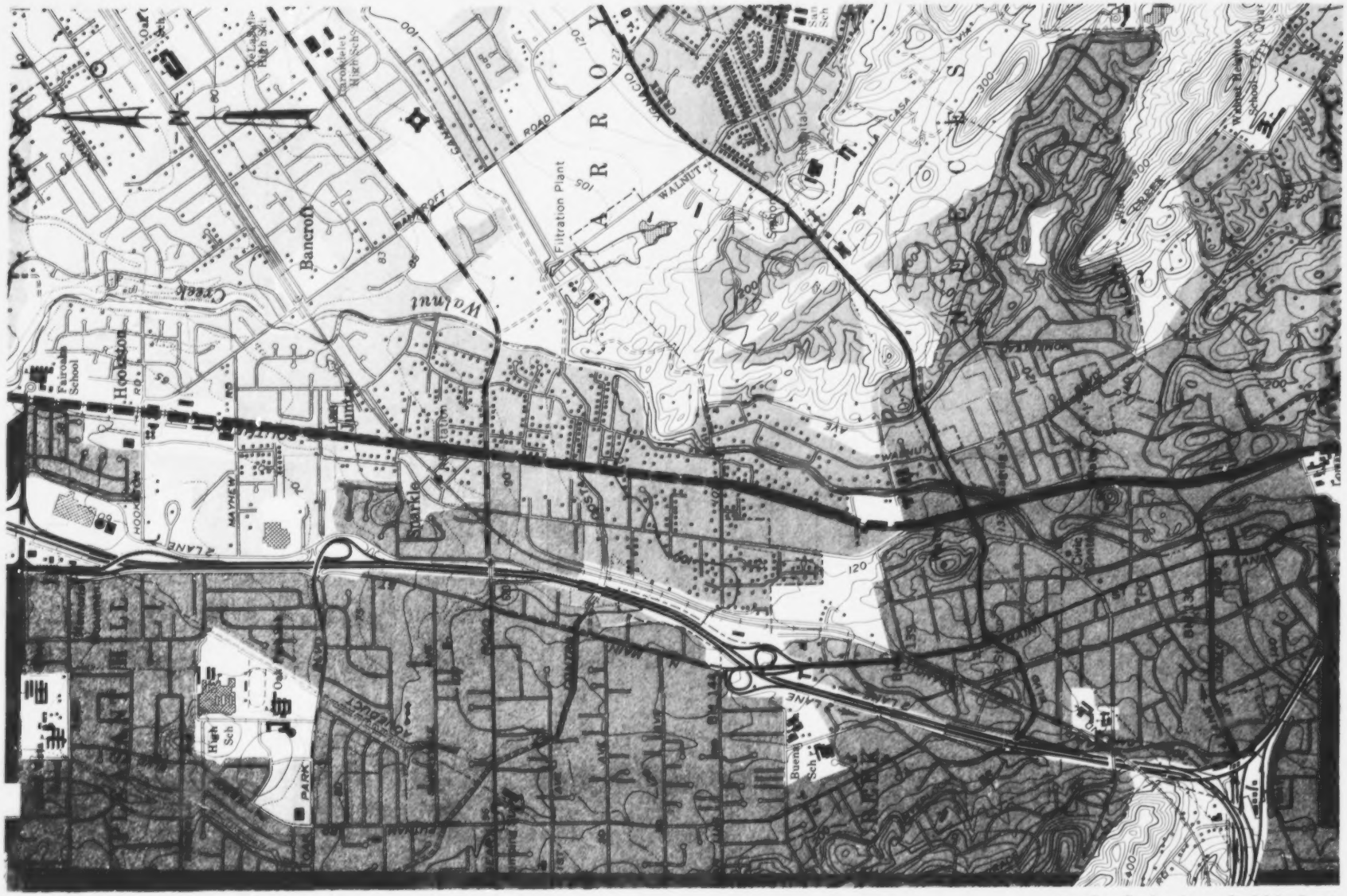


Figure 1-5. Pipeline Route - Suisun Bay Discharge



Scale 1 inch = 2,000 feet

Figure 1-6. Pipeline Route - Suisun Bay Discharge

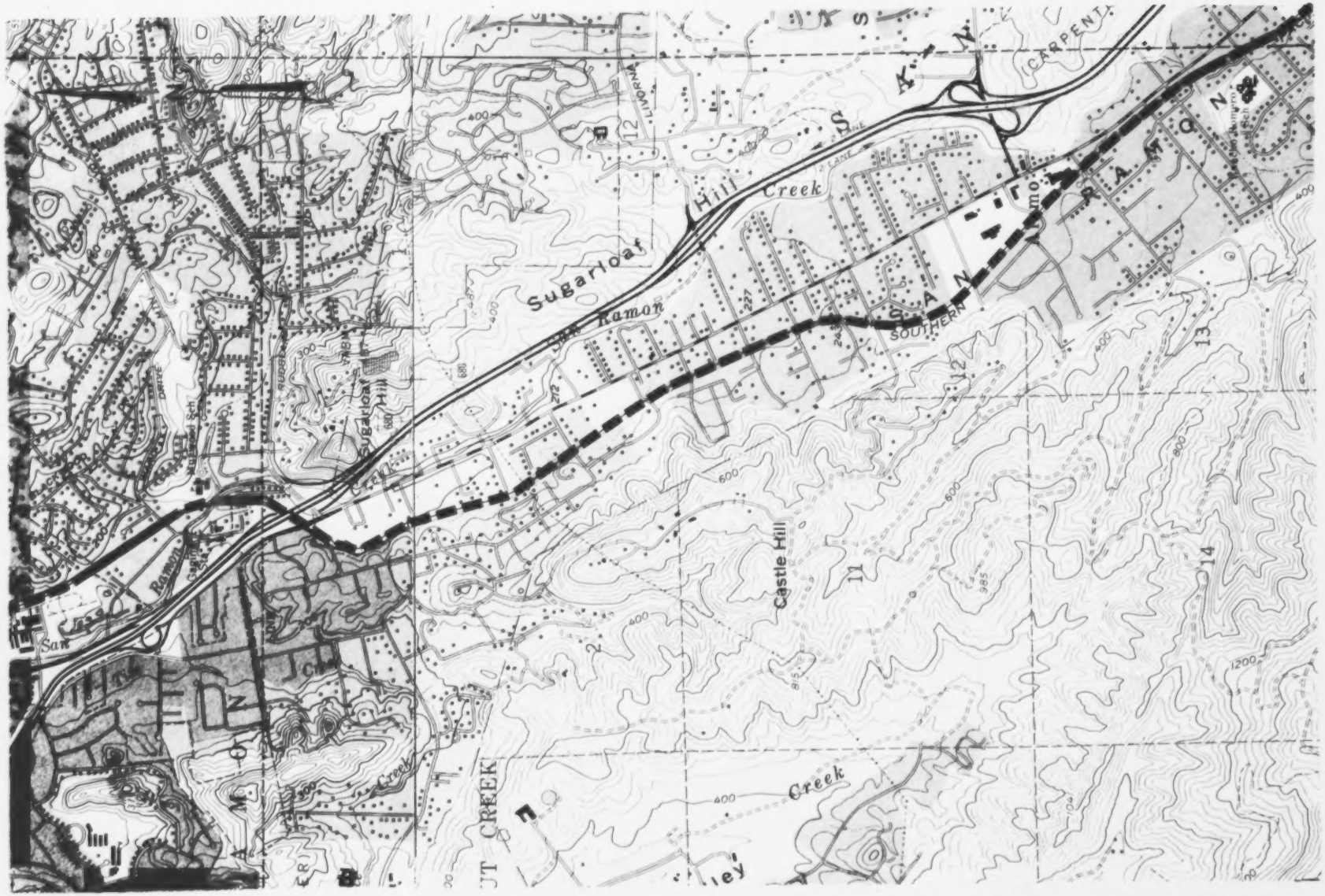
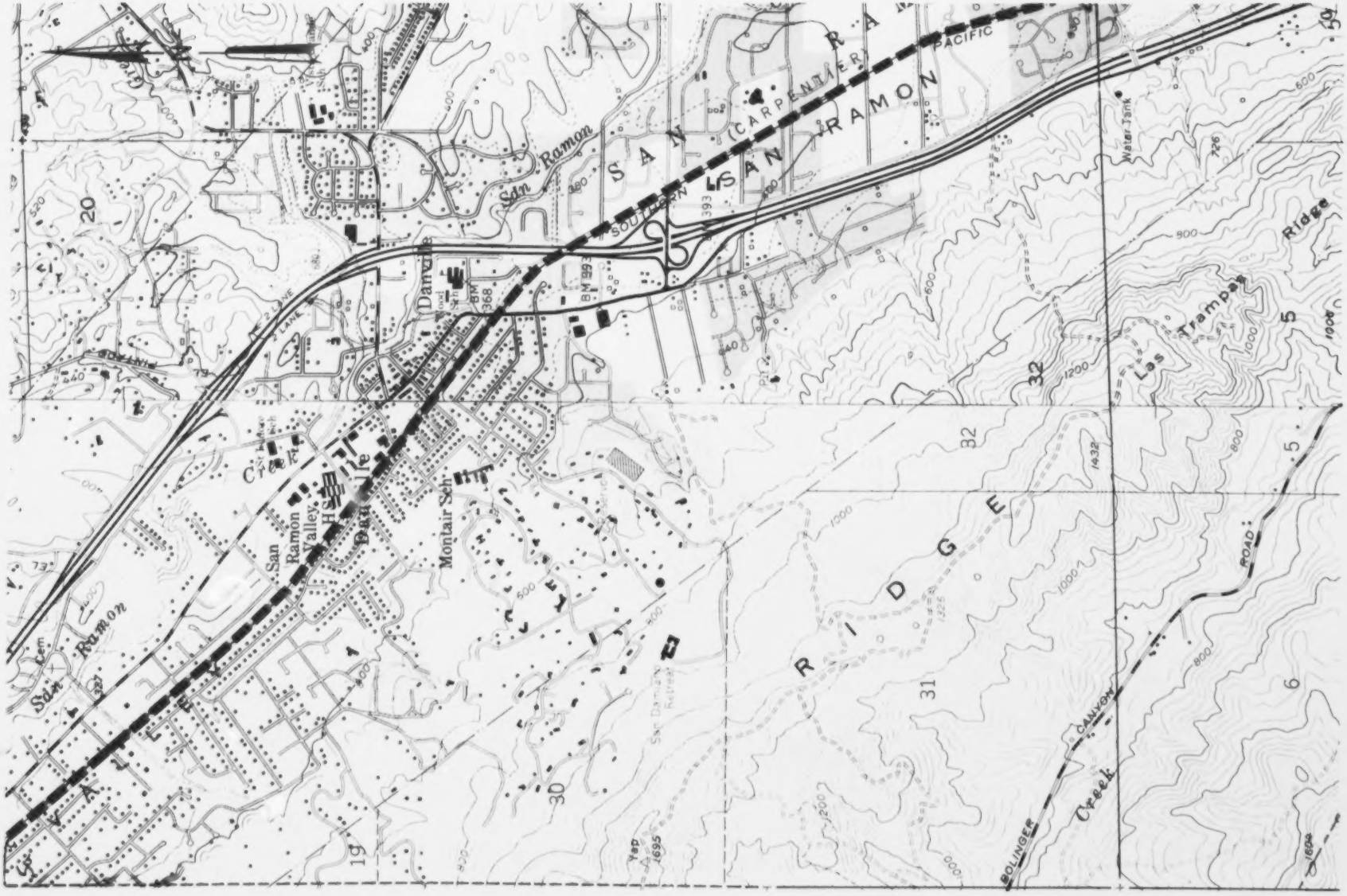


Figure 1-7. Pipeline Route - Suisun Bay Discharge



Scale 1 inch = 2,000 feet

Figure 1-8. Pipeline Route - Suisun Bay Discharge

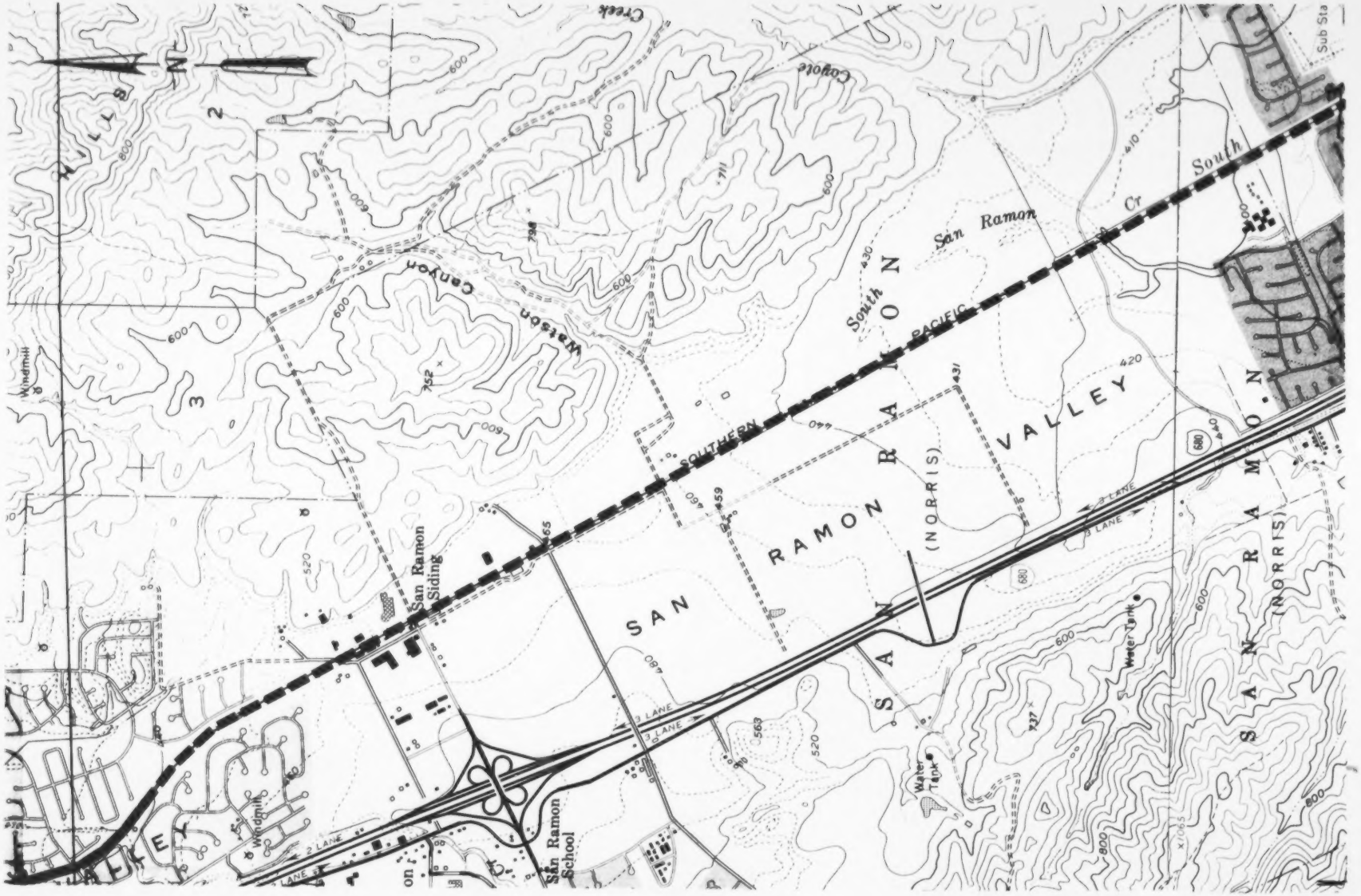
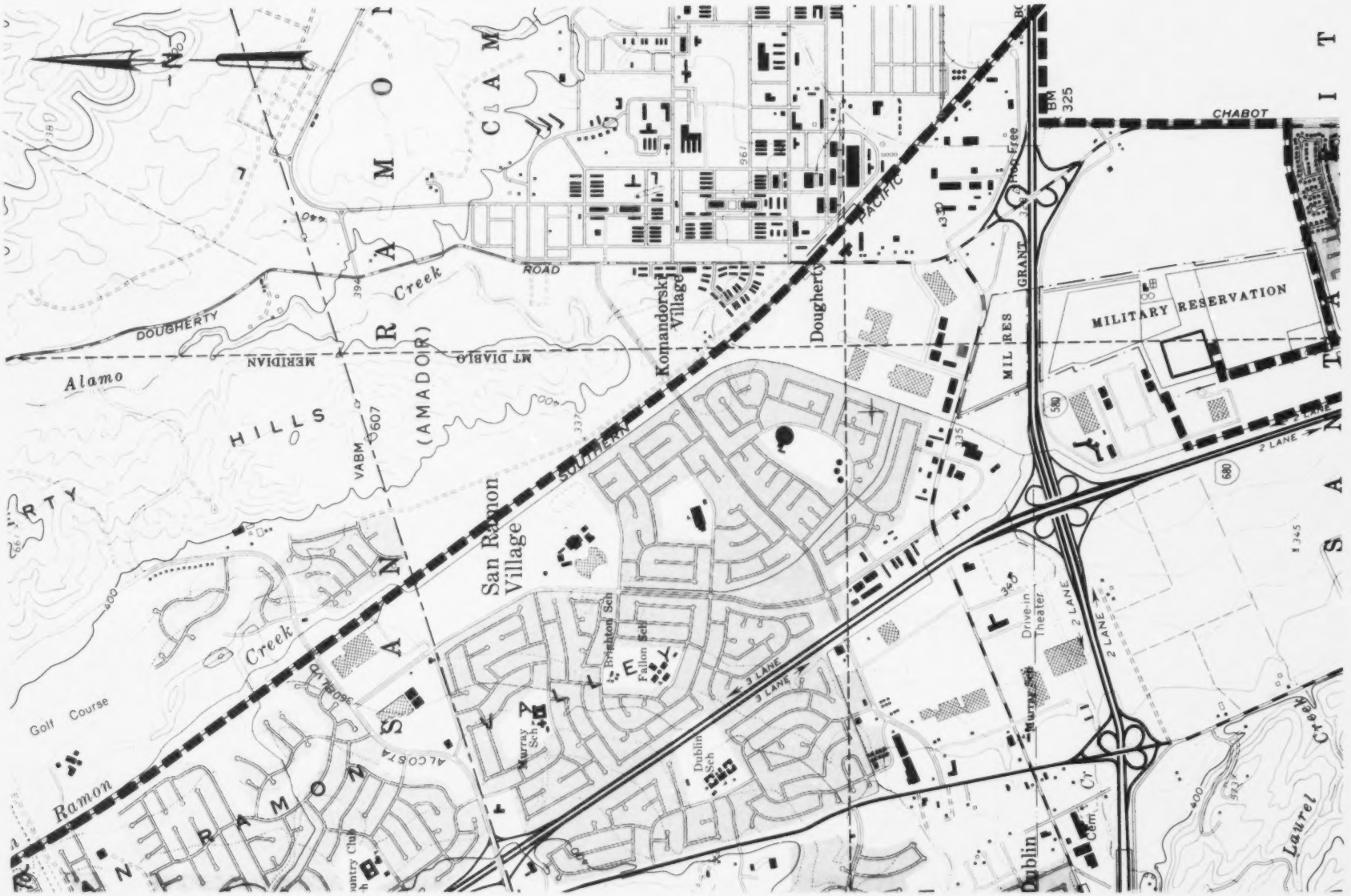
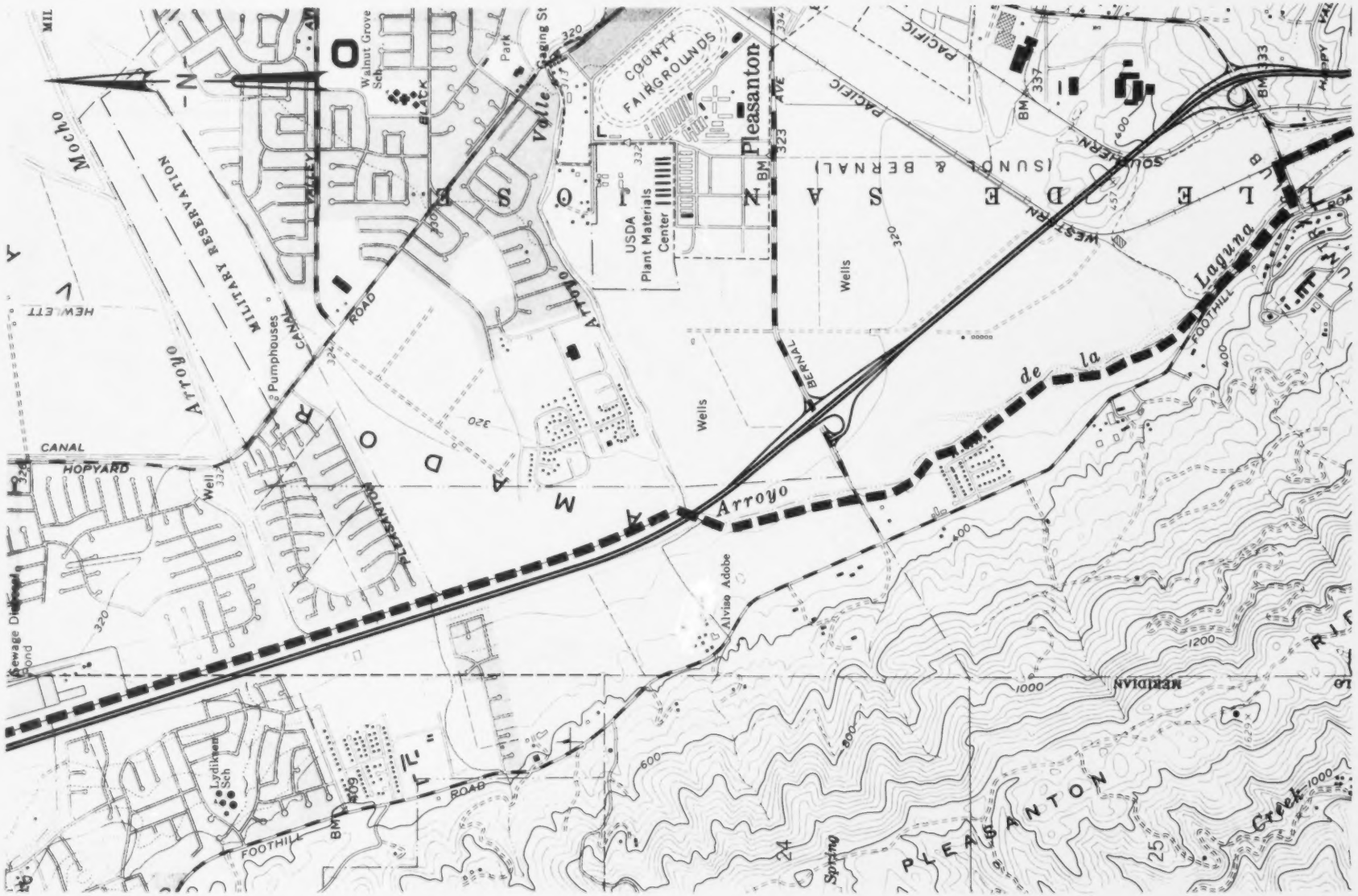


Figure 1-9. Pipeline Route - Suisun Bay Discharge



Scale 1 inch = 2,000 feet

Figure 1-10. Pipeline Route - Suisun Bay Discharge and Niles Canyon Alternatives



Scale 1 inch = 2,000 feet

Figure 1-11. Pipeline Route - Niles Canyon Alternatives

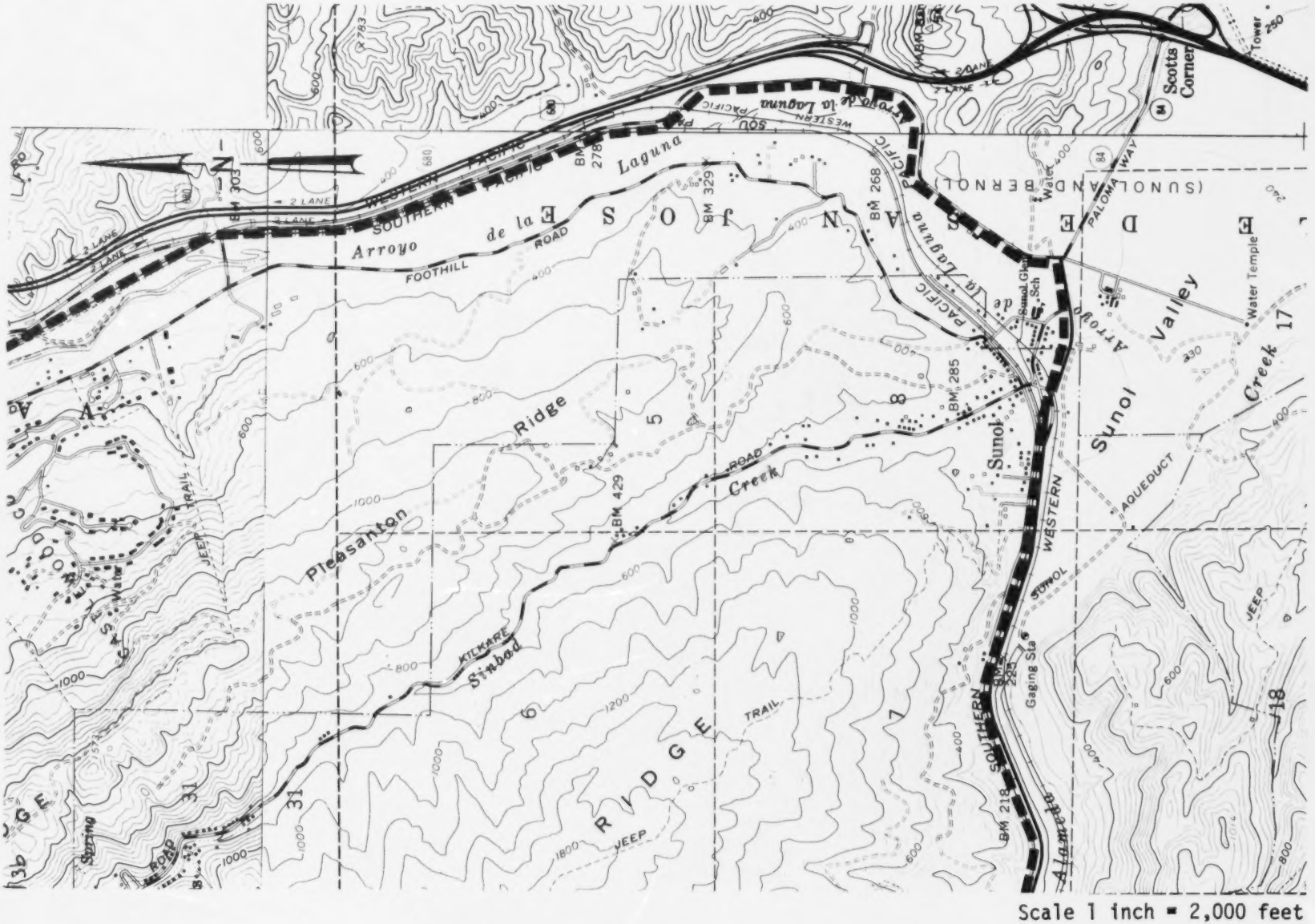


Figure 1-12. Pipeline Route - Niles Canyon Alternatives

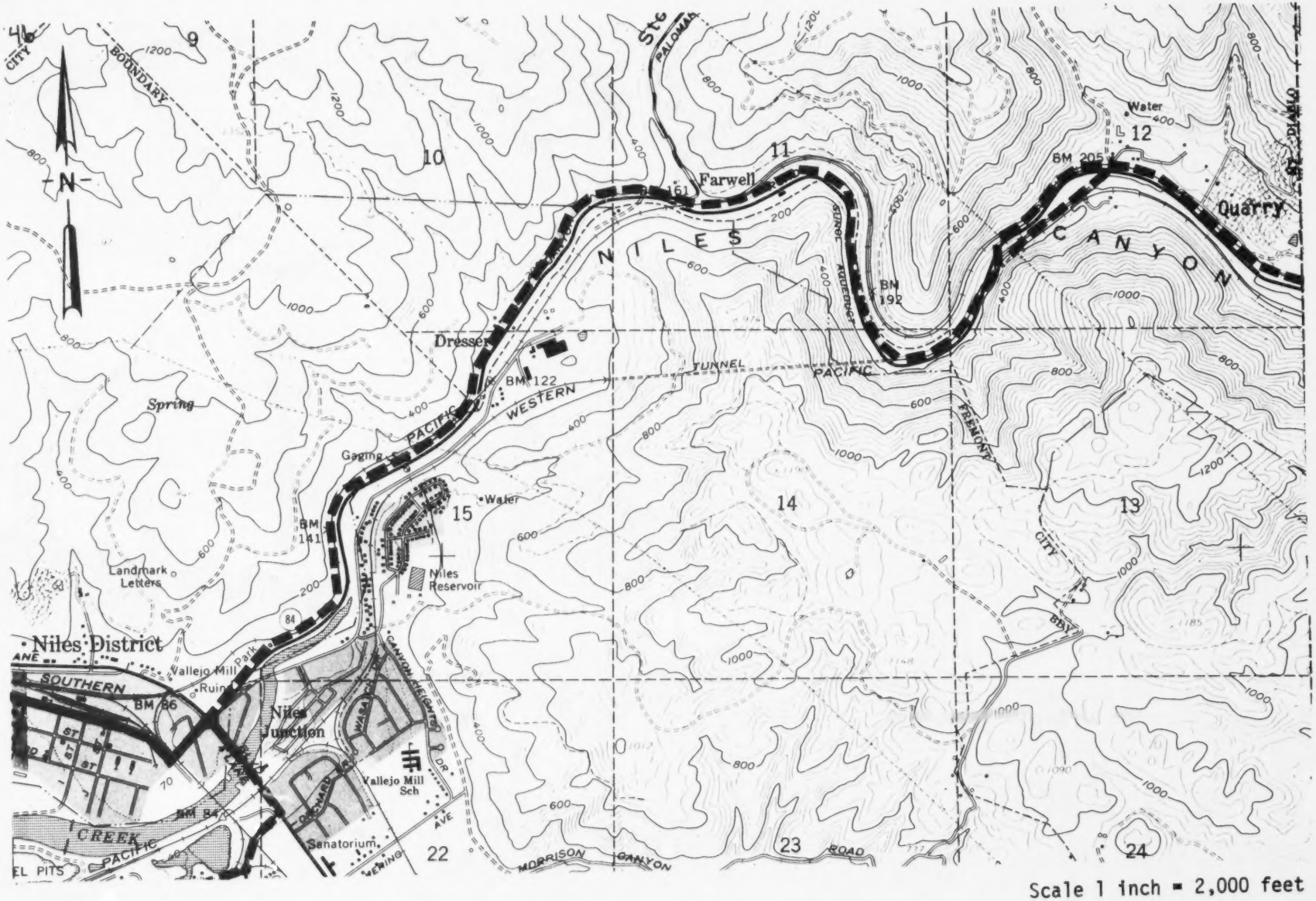
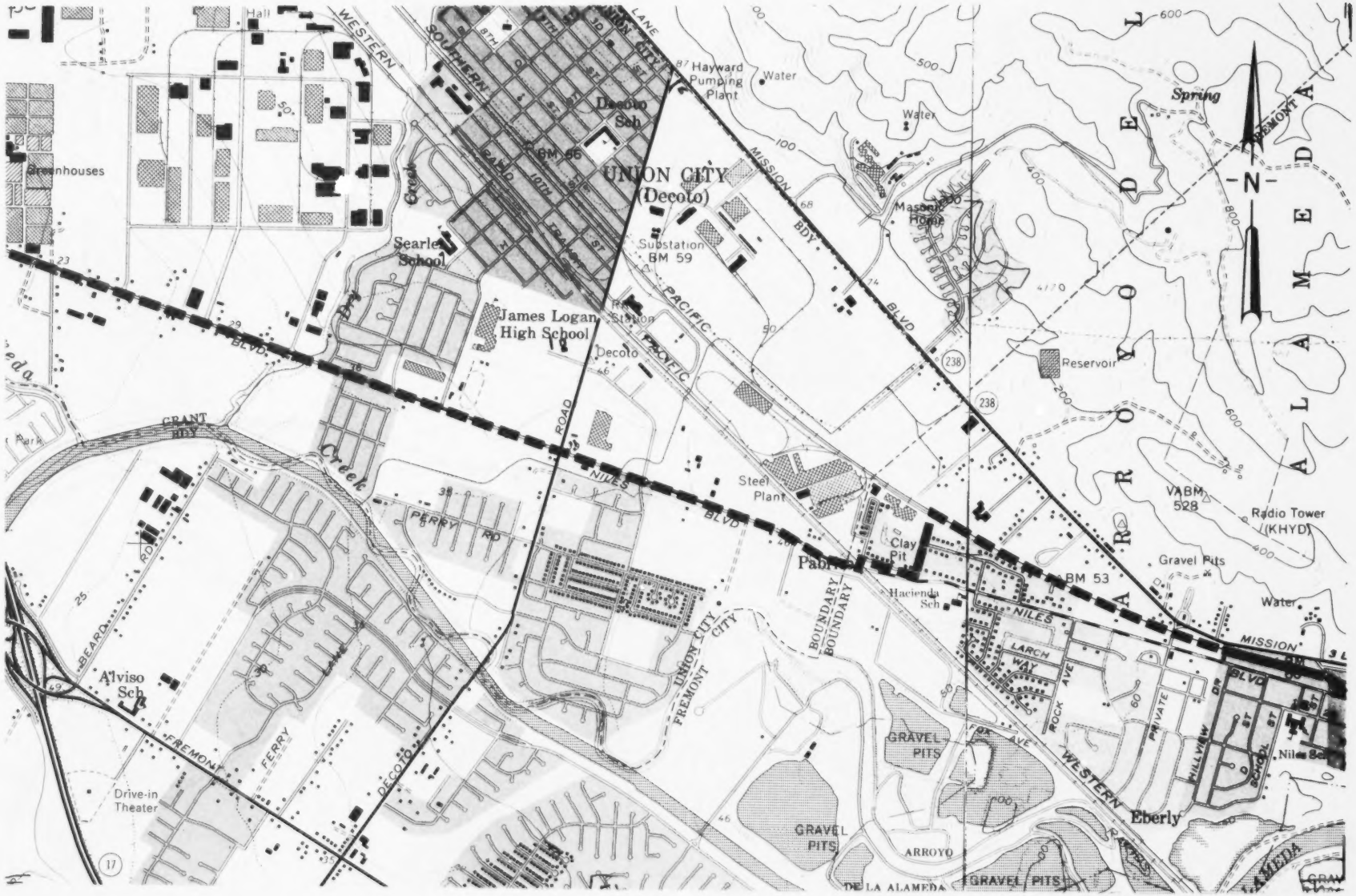


Figure 1-13. Pipeline Route - Niles Canyon Alternatives



Scale 1 inch = 2,000 feet

Figure 1-14. Pipeline Route - Niles Canyon-EBDA Connection

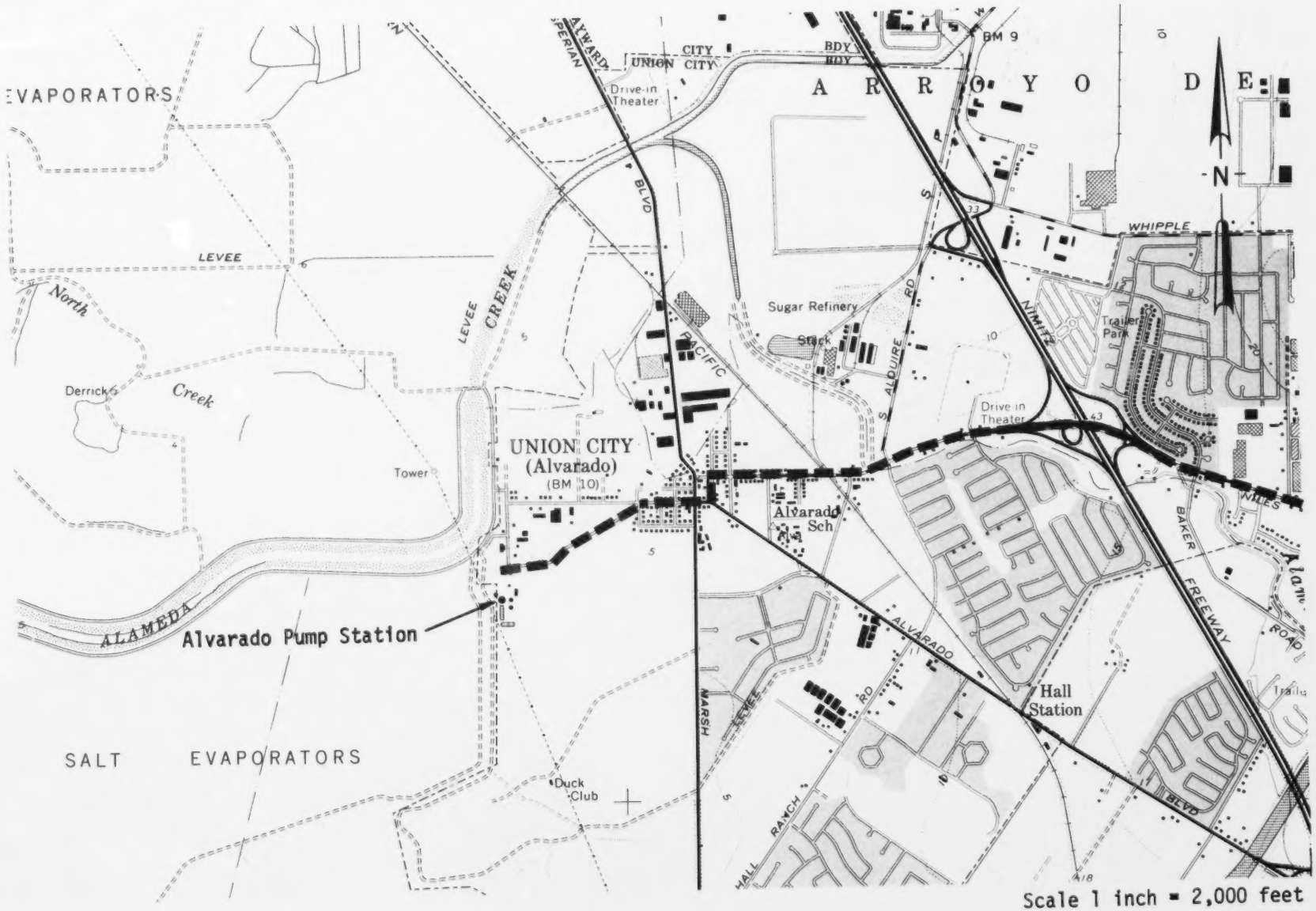


Figure 1-15. Pipeline Route - Niles Canyon-EBDA Connection

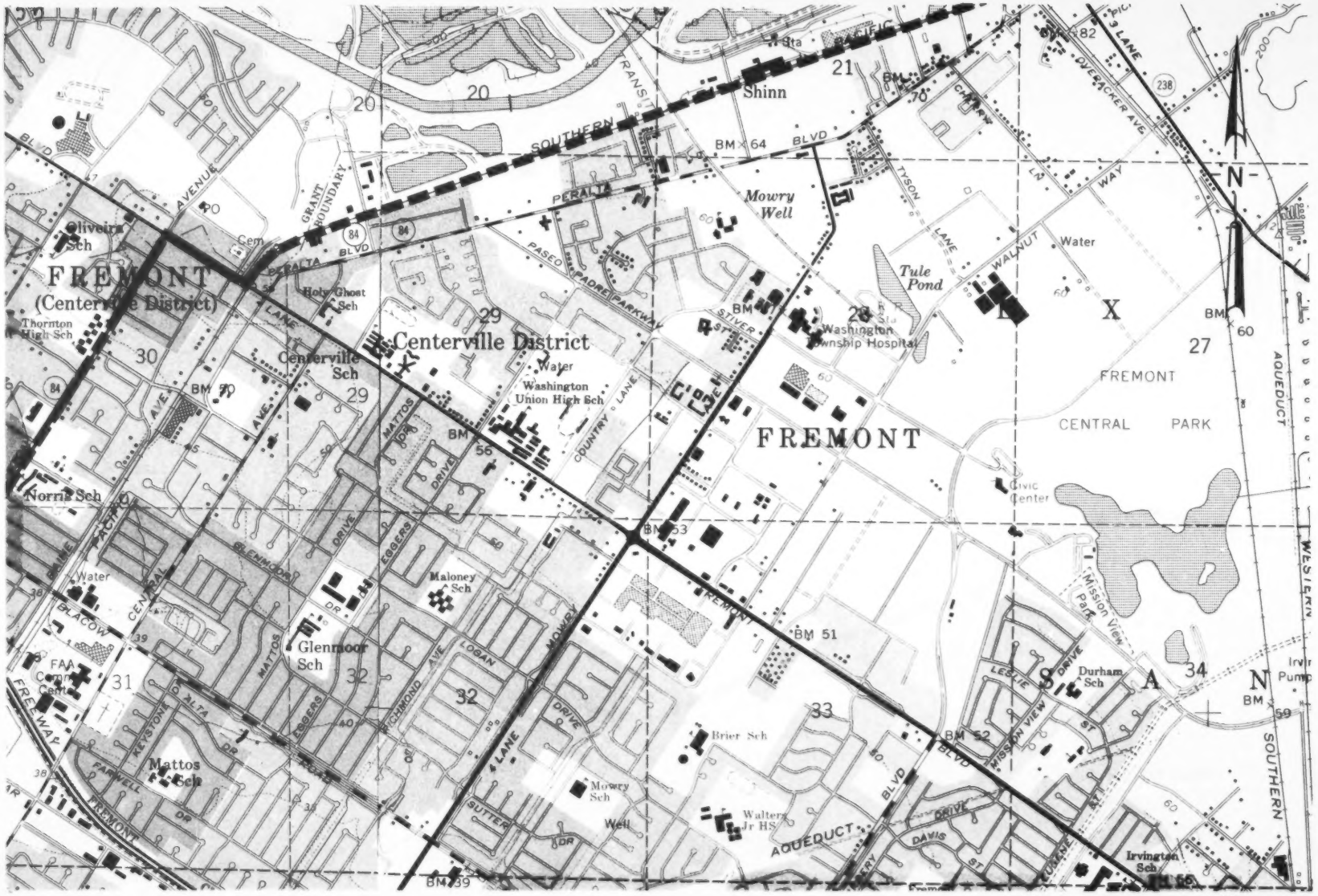
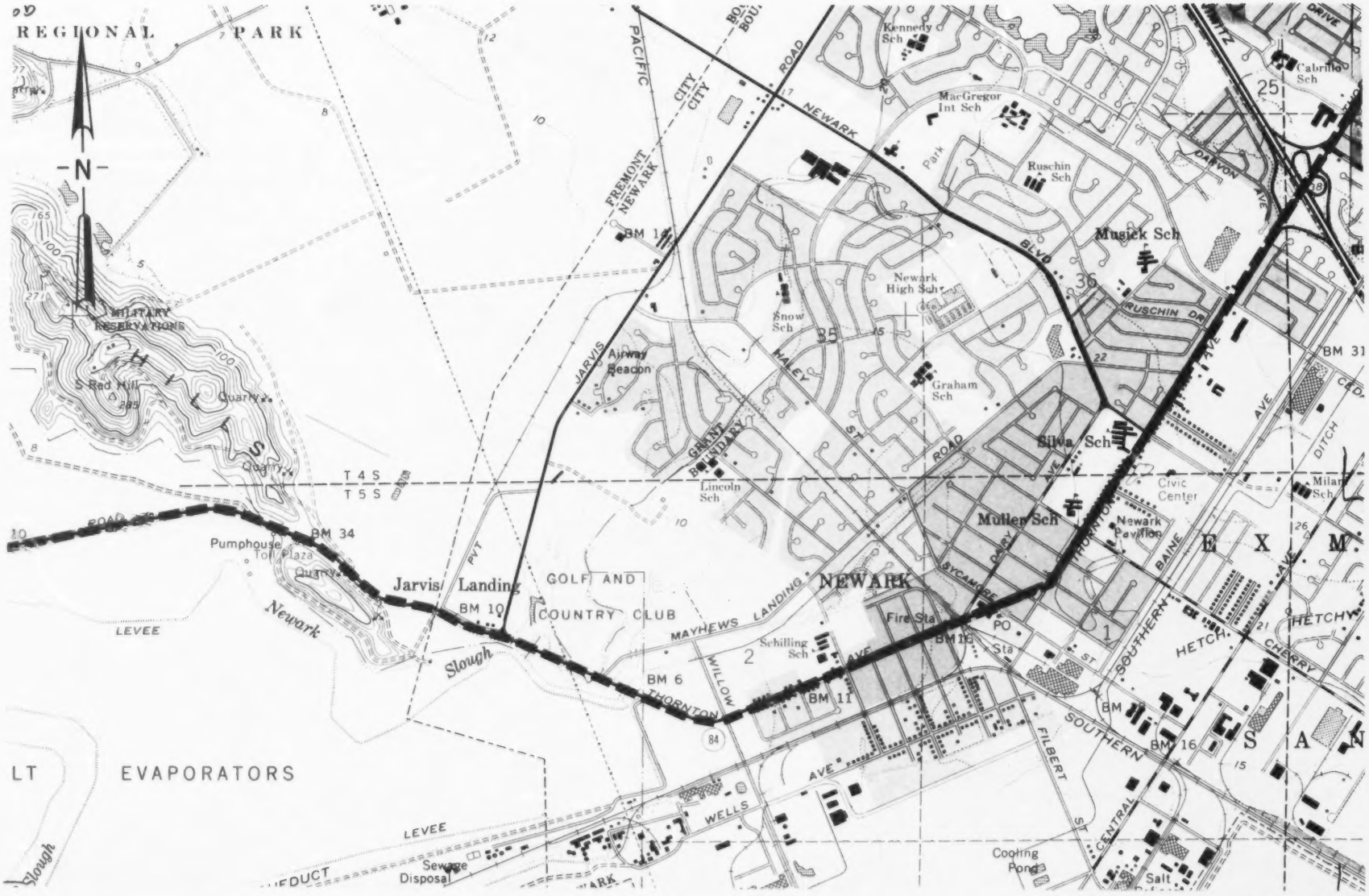
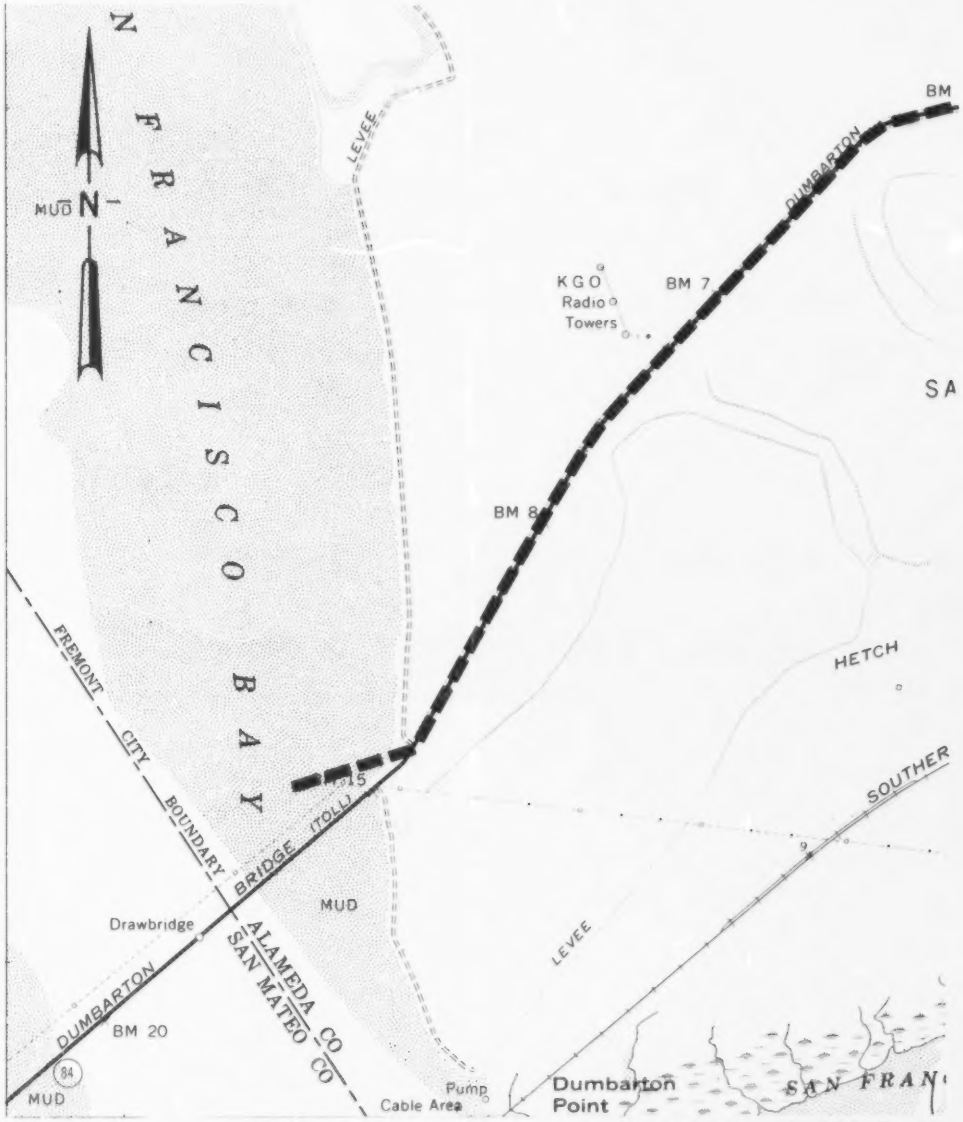


Figure 1-16. Pipeline Route - Niles Canyon-South Bay Discharge



Scale 1 inch = 2,000 feet

Figure 1-17. Pipeline Route - Niles Canyon-South Bay Discharge



Scale 1 inch = 2,000 feet

Figure 1-18. Pipeline Route - Niles Canyon-South Bay Discharge

APPENDIX A

Table 1-1

PIPELINE LENGTHS AND STATIC LIFT

ALTERNATIVE	TYPE OF PIPELINE	TOTAL LENGTH	TOTAL STATIC LIFT OF FORCE MAIN
Suisun Bay Discharge	Force main -- Gravity Flow	30.3 miles	190 feet
Niles Canyon-South Bay Pipeline	Gravity Flow	25.6 miles	--
Niles Canyon-EBDA Connection Pipeline	Gravity Flow	23 miles	--
I-580-EBDA Connection Pipeline	Force main -- Gravity Flow	15.4 miles	445 feet

Niles Canyon-EBDA Connection

The pipeline alignment for this alternative, shown in Figures 1-10 through 1-15, would be a gravity flow line throughout its entire length with elevations ranging from 300 feet above sea level at the VCSD pump station to less than 5 feet at the Alvarado pump station.

From the proposed regulating reservoirs at the VCSD treatment plant, the pipeline would proceed eastward for about 1,000 feet to the service road paralleling I-680. The pipeline would proceed southward remaining on the east side of I-680 to the junction of Arroyo Valle and Arroyo de la Laguna where it would cross under I-680 and proceed along the west side of Arroyo de la Laguna to Castlewood Drive. After passing eastward along the north side of Castlewood Drive to an unimproved dirt road that runs along the western side of the Western Pacific Railroad right-of-way, the pipeline would proceed southward along the western right-of-way of Western Pacific to Verona Road. At this point, the Southern Pacific tracks cross the Western Pacific tracks and proceeds southward along the west side of Pleasanton-Sunol Road to the intersection of Niles Canyon Road.

The pipeline would proceed along the north side of Niles Canyon Road to the vicinity of BM205 (Figure 1-13). At BM205, the pipeline would either cross Alameda Creek using abandoned bridge piers or would continue along the north side of Niles Canyon Road, crossing the creek via the existing highway bridge. If the stream crossing is made at the old bridge piers, the pipeline would proceed along a small private road on the southern side of the creek down to its junction with Niles Canyon Road. The pipeline would then proceed along the northern side of the road, crossing the creek again about one-half mile west of Farwell (junction of Palomares Road and Niles Canyon Road), crossing Mission Boulevard at Niles, and continuing to Niles Boulevard. The pipeline would proceed westward along Niles Boulevard before cutting over to the SP right-of-way at Sullivan Underpass and continuing along the southern side of the SP right-of-way.

Eventually, the pipeline would turn southward and move along Linda Drive at the eastern boundary of the Kraftile property to the intersection of an unnamed street that parallels Niles Boulevard (see Figure 1-14). At Niles Boulevard, the pipeline would pass westward about 800 feet to Kraftile Road, then southward across the Western Pacific tracks to the northern side of Niles Boulevard, along the northern boundary of Niles Boulevard and Alvarado-Niles Road, beneath the Nimitz Freeway across Hall Ranch Road (Dyer Street), and into Union City (Alvarado). In Alvarado, the pipeline would jog south one block east of Union City Boulevard (Marsh Road) to Alvarado Boulevard-Horner Street before heading out to Alvarado treatment plant location along the access road.

Niles Canyon-South Bay Discharge

The alignment for the Niles Canyon-South Bay Discharge alternative is identical to the Niles Canyon-EBDA Connection from the VCSD plant to the mouth of Niles Canyon (Figures 1-10 through 1-13). That portion of the route that differs from the above alternative is shown in Figures 1-16 through 1-18.

From the Niles Canyon Road-Mission Boulevard intersection, this pipeline would proceed southward along the western side of Mission Boulevard to Peralta Boulevard, then along Peralta Boulevard to the Southern Pacific tracks. The pipeline would continue along the SP right-of-way down to Fremont Boulevard, then northwesterly along Fremont Boulevard to the Thornton Avenue-Dumbarton Road (State Highway 84) right-of-way, and along the road to the proposed outfall location just north of Dumbarton Bridge.

PURPOSE AND SCOPE

The main purpose of this report is to provide the LAVWMA Board with environmental data on the three additional alternatives so that the Board can decide whether any of these alternatives is more environmentally acceptable than the previously selected project. This information, coupled with the information in the engineer's project cost report, should enable the LAVWMA Board to select the most cost-efficient alternative.

Should the LAVWMA Board choose one of these alternatives as the new selected project, this report will be upgraded to a full EIR/EIS and the EIR/EIS process will be initiated, including a public hearing and review before the report is finalized. If the board decides to reaffirm the previously selected project, this preliminary report will be combined with the preliminary addendum on the selected project and published as a final addendum to the LAVWMA Final EIS of August 1976.

The scope of the environmental evaluation contained in this report was restricted to the level of design data available. In general, the pipeline alignments were drawn on USGS quadrangle maps of a scale of 1:24,000 (1 inch = 2,000 feet). The impact evaluation was restricted primarily to the direct effects of pipeline construction and facilities operation. Secondary impacts associated with the effects of accommodated population growth in the Livermore-Amador Valley were discussed in the Draft EIS.

The term "selected project" as used throughout this report refers to the previously selected alternative (the Boehmer Summit-EBDA Connection); the only alternative for which a final EIR/EIS has been completed. The term should not be interpreted as meaning that the board is committed to the Boehmer Summit alternative.

APPENDIX A

SECTION 2
ENVIRONMENTAL SETTING

INTRODUCTION

To assess the magnitude and significance of potential environmental changes associated with the construction and operation of the proposed wastewater management alternatives under consideration, a thorough understanding of the existing environment is required. This section provides a description of the aspects of the environment that could be affected, including the physical, natural, and human components. Since regional and area-wide environmental settings were previously discussed in the LAVWMA Draft EIR, this discussion is restricted primarily to the anticipated zone of disturbance associated with pipeline construction and operation. In addition, the discussion focuses on those areas and aspects of the environment that are most sensitive.

The following descriptions of the environment are based on data from published sources and communications with appropriate individuals in federal, state and local governmental agencies. Field surveys of biological and archeological resources were conducted along each of the alternative pipeline routes as well.

GEOLOGY

The following discussion of the geologic conditions along the proposed pipeline route is based solely on published data. No field data were available specifically for the proposed project alternatives. Thus, the discussion addresses the geologic conditions along the various routes in general terms and is not intended to be used in place of a project geotechnical report. Since discussions of regional nature (e.g., seismic history, geologic structure, geologic history) were previously discussed in the LAVWMA Draft EIS, they are not repeated here.

Suisun Bay Discharge

The proposed pipeline route for this alternative traverses unconsolidated surficial deposits (primary alluvium) throughout most of its length. From the VCSD treatment plant site, which is located on nearly flat alluvial terrain at the western edge of the Amador Valley, the pipeline would proceed northward through San Ramon Valley, across an area of shallow surficial sediments and sedimentary rock in the vicinity of Walnut Creek, into Ygnacio Valley, and

finally across low-lying marshlands before terminating in Suisun Bay.

The only areas along the pipeline route where consolidated rock is encountered are in the vicinity of Walnut Creek. At several locations in this vicinity, the SP railroad bed cuts through the Neroly Sandstone. The Neroly Sandstone, which is of upper Miocene age, is composed predominantly of nearly vertically tilted beds of blue sandstone with minor beds of shale and siltstone. The only other exposure of indurated rock occurs in the hills just north of CCC Sanitary District treatment plant where a steeply dipping, unnamed shale and mudstone formation of Cretaceous age occurs.

The unconsolidated sediments in Amador and Ygnacio Valleys consist of thick deposits of silt, sand, clay and some gravel. The sediments at the northern end of the pipeline route consist of soft bay mud and silt.

The soils throughout most of the pipeline route consist of relatively firm, deep clay loams (U.S. Soil Conservation Service, 1974). Exceptions occur in the vicinity of Walnut Creek where shallow (1 to 3.5 feet) clay loams and silty clay loams overlie sandstone and at the northern end of the route where soft organic clay, muck, and bay dredge spoils occur. No active mineral resource deposits occur along the proposed route.

According to Special Studies Zones maps published by the State Geologist, the proposed pipeline would cross or lie within the zone of two potentially active fault zones -- the Concord and Pleasanton faults.

Official Special Studies Zones Maps show that a presumed trace of the Concord Fault crosses the proposed pipeline route at two locations -- at State Highway 4 near the Walnut Creek channel and near the Concord Avenue-SP crossing. Displacement along the Concord Fault has been horizontal and of right-lateral nature (i.e., land on the east side of the fault is being displaced southward relative to the west side). Minor fault creep has been observed along the Concord Fault in the vicinity of the pipeline route crossing (Sharp, 1973).

The trace of the west branch of the Pleasanton Fault crosses the pipeline route at a low angle at the SP-I-580 intersection. In addition, postulated northward extensions of the Pleasanton Fault cross the pipeline route at two locations in San Ramon Valley -- at approximately 1 mile and 2.7 miles north of the county line (Slossen, 1974).

Niles Canyon-South Bay Discharge

The pipeline route for this alternative would traverse nearby level terrain throughout most of its length. From the VCSD treatment plant site, the pipeline route proceeds southward along the western margin of the Amador Valley, then westward through the narrow, steep-sided canyon formed by Alameda Creek (Niles Canyon), and finally across the nearly flat terrain of the bayside plain and into San Francisco Bay.

The geologic units encountered along this route consist of thick, unconsolidated alluvial material in Amador Valley, bedrock or thin stream terrace deposits in Niles Canyon, and thick

unconsolidated alluvium on the bayside plain. In addition, thick deposits of soft bay mud occur beneath the marshlands along the bay and on the bay bottom at the western end of the pipeline.

The soils that have developed upon the geologic units range from deep silty and clay loams in the Amador Valley and bayside plain portions of the pipeline route to thin sandy, silty, and cobbly loams in Niles Canyon and highly organic clays in the marshlands at the edge of the bay. Active mineral resource deposits that occur near this pipeline route include a rather large expandable shale quarry and processing plant on the north side of Alameda Creek about 1.5 miles west of Sunol (Figure 1-13) and two rock quarries on either side of the pipeline route (State Highway 84) in the Coyote Hills (Figure 1-17).

Two well-known, potentially active fault zones are crossed by this route. These are the Calaveras-Sunol fault zone that trends along the western border of the Amador and Sunol valleys and the Hayward fault zone that extends along the eastern edge of the bayside plain and at the foot of the east bay hills. These faults are two of the three major active fault zones in the Bay Area, the third being the San Andreas Fault located on the west side of the San Francisco Peninsula. Both sudden movement, in the form of an earthquake, and slow, gradual movement known as tectonic creep, have been observed along the Hayward Fault. In fact one of the more well-known and documented zones of tectonic creep along the Hayward Fault occurs at its crossing of the SP tracks in Fremont at Shinn (Figure 1-16). The proposed pipeline route for the South Bay Discharge proceeds along these same SP tracks. The SP tracks at this location, as well the Western Pacific tracks to the north, have been offset about 8 inches since the tracks were first laid about 55 years ago (Radbuch and Bonilla, 1966). This amounts to an average rate of movement of more than 0.14 inches per year, but lateral shifts of up to 1-1/2 inches have occurred within a period of 2 or 3 days.

Tectonic creep has also been observed along the Calaveras-Sunol Fault between Sunol and Hollister. A strong earthquake that was centered in the Dublin area on July 3, 1861, is also believed to have been related to movement along the Calaveras-Sunol Fault.

Niles Canyon-EBDA Connection

The geologic setting for this alternative is identical to that described above for the Niles Canyon-South Bay Discharge alternative from the VCSD treatment plant to the western end of Niles Canyon. Although the route from the mouth of Niles Canyon at Niles differs from the South Bay Discharge line, the geologic conditions are similar. From Niles to the Alvarado pumping station, the pipeline route traverses nearly flat terrain of the bayside plain. Underlying sediments consist of unconsolidated alluvial deposits, primarily sands, silts, and clays. The soils that have developed upon these sediments are also composed predominantly of silty and clayey loams. The route must also cross the active Hayward Fault. Near Pabrico, the pipeline traverses the eastern margin of an active clay pit and tile manufacturing plant, which is the only active mineral deposit traversed by any of the pipeline routes (Figure 1-14).

APPENDIX A

TERRESTRIAL BIOLOGY

Suisun Bay Discharge

Vegetation

Most of the pipeline corridor defined for this alternative lies within regions that have been significantly altered by human activity. Much of the vegetation has been planted or consists of opportunistic species that are characteristic of disturbed areas. Consequently, the biological resources of this proposed route are minimal. No rare plants have been reported along this proposed pipeline corridor (California Native Plant Society, 1977).

The proposed pipeline corridor traverses a narrow band of tidal marshland, about 400 feet wide, just south of its terminus at Suisun Bay. This is the most sensitive and the most intrinsically valuable portion of the corridor. The marsh supports salt grass (Distichlis spicata), which comprises the dominant ground cover, bulrush (Scirpus cf. Californicus), and marsh grindelia (Grindelia humilis). No pickleweed (Salicornia pacifica) marsh, the most abundant type of marshland surrounding San Francisco Bay, was visible at the time of field survey because the tide was high. Aerial photographs, however, reveal that vegetation extends beyond the narrow saltgrass zone observed during field work. The submerged vegetation is almost undoubtedly pickleweed marsh. This is corroborated by the CCC Sanitary District and the EPA, Region IX (1976).

The pipeline corridor proceeds south to Arnold Industrial Highway (State Highway 4) through diked and filled marshland. Some of this land is densely vegetated with weedy (i.e., opportunistic and probably introduced) forbs, while much of it is barren. Species that were identified in this region include coyote brush (Baccharis pilularis), milk thistle (Silybum marianum), clover (Trifolium sp.), a few species of saltbush (Atriplex spp.), some pickleweed, and various grasses.

The corridor then runs east along the north side of Arnold Industrial Highway. Dominant vegetation along the road is pickleweed and fescue grass (Festuca sp.). Wild radish (Raphanus sativa) and milk thistle are also present.

At the intersection of Arnold Industrial Highway with the Southern Pacific Railroad line, the pipeline corridor turns south. From that point to where the railroad line intersects I-580, the corridor is confined to the railroad's right-of-way. This entire segment of the corridor is virtually barren. Although it passes through many residential areas where native and introduced ornamental trees have been planted, none grow within the right-of-way. The only plants observed were scattered grasses, mainly ryegrass (Lolium sp.), field cress (Brassica campestris), cheeseweed (Malva neglecta), and occasional coyote brush. At one location, just south of Ygnacio Valley Road, some tree-of-heaven (Ailanthus altissimus) -- a rank, introduced, opportunistic species -- was observed. The pipeline corridor does cross a few creeks, but these are channelized.

South of the intersection of the Southern Pacific Railroad line and I-580, the proposed pipeline would run for approximately 2 miles along road and highway rights-of-way to its terminus at the

VCSD sewage treatment plant. The land here has been cultivated and apparently used as pasture; it currently supports grasses and vetch (Vicia sp.).

Wildlife

The marsh at the northern end of the corridor comprises the most valuable wildlife habitat within the project area. Pickleweed marsh is the habitat of the endangered salt marsh harvest mouse (Reithrodontomys raviventris). A marsh hawk (Circus cyaneus) was seen hunting over the marsh and a long-billed marsh wren (Telmatodytes palustris) was observed in the salt-grass zone of the marsh during the field survey. Shorebirds and herons feed in the salt marsh and the mud flats below it at low tide.

The filled land south of the tidal marsh was observed to support western meadowlarks (Sturnella neglecta), water pipits (Anthus spinoletta), and whitecrowned sparrows (Zonotrichia leucophrys). Other seed-eating birds are likely to feed on this land when there is an abundant seed crop. A black-tailed hare (Lepus californicus) was observed in this region. The only other indication of mammal presence was an unidentifiable rodent burrow, possible the dwelling of a California ground squirrel (Otospermophilus beecheyi). This region is also likely to support roof rats (Rattus rattus), house mice (Mus musculus), and deer mice (Peromyscus spp.); these rodents, in turn, provide food for hawks and owls.

The portion of the pipeline corridor within the Southern Pacific Railroad right-of-way probably does not support much wildlife, although the residential regions through which it passes support a variety of songbirds and disturbance-tolerant mammals like roof rats, house mice, and bats. The cultivated pasture at the southern end of the proposed corridor (south of I-580) provides habitat for meadow mice (Microtus californicus), deer mice, western meadowlarks, various sparrows, ground squirrels, and pocket gophers. These species provide forage for hunting raptorial birds.

Niles Canyon-South Bay Discharge

Vegetation

Approximately the first 2.5 miles of the pipeline corridor defined for this alternative runs between I-680 and a channelized stream (Alamo Canal). The land here has been disturbed, and supports mostly introduced grasses and forbs.

From one-half mile north of Bernal Avenue, for a distance of approximately 2 miles, the pipeline would be situated on the west bank of Arroyo de la Laguna. The vegetation on the banks of the arroyo comprises a riparian woodland. This vegetational type has been designated by the California Department of Fish and Game as primary, critical habitat. The dominant trees here include valley white oak (Quercus lobata), willows (Salix sp.), and, in some places, California buckeye (Aesculus californicus). Blackberry (Rubus ursinus) is the primary component of the woody undergrowth. Poison hemlock (Conium maculatum), milk thistle, western bittercress (Cardamine oligosperma), and canary grass (Phalaris californicus) are the most abundant herbaceous species.

The pipeline corridor crosses the stream and runs along the east side of the Western Pacific

Railroad line and then along Pleasanton-Sunol Road until its intersection with Niles Canyon Road. The corridor here passes through disturbed land adjacent to the road. The arroyo itself displays a somewhat different vegetation than further north. California buckeye is much more common, and coastline oak (Quercus agrifolia), a big leaf maple (Acer macrophyllum), and California sycamore (Platanus californicus) are dominant components of the riparian woodland.

This same type of woodland, replaced by a willow community at some locations, is found along Alameda Creek in Niles Canyon. Most of this portion of the corridor is made up of disturbed vegetation, approximately 15 to 20 feet wide, adjacent to the road. In a few locations, this zone is much narrower and the pipeline would traverse through some riparian woodland. In two locations in Section 15, R 1W, T 4S, the pipeline route comes close to reported individuals of the rare and endangered California black walnut (Juglans hindsii). One of these, between Old Niles Road and the creek, may no longer be there. The other is found where the Southern Pacific Railroad trestle crosses the road (California Native Plant Society, 1977).

Beyond Niles Junction, the pipeline route remains adjacent to roads. It passes next to a few orchards, through an urbanized district of Fremont, through agricultural and otherwise disturbed land, through salt evaporation ponds in the vicinity of Newark Slough, and into San Francisco Bay just north of the Dumbarton Bridge. There is no viable salt marsh in this region.

Wildlife

Wildlife in the disturbed land at the beginning of this route is virtually the same as that which uses the cultivated pasture at the southern end of the Suisun Bay Pipeline corridor: rodents and a few birds inhabit the region and a variety of songbirds and predatory birds forage there. Mammalian predators are probably largely restricted from the area because of limited access imposed on the west by I-680 and on the east by the channalized stream.

The riparian woodlands of Arroyo de la Laguna and Alameda Creek are the most sensitive regions along this alternative route. They provide nesting and feeding habitat for a great variety of birds and many burrowing mammals. The California yellow-billed cuckoo (Coccyzus americanus occidentalis) a rare and endangered species, is dependent upon the type of dense riparian vegetation found here. Raccoon (Procyon lotor), opossum (Didelphis marsupialis), muskrat (Ondatra zibethica), shrews (Sorex spp.), and amphibians are primarily restricted to streamside plant communities.

The urbanized portions of the pipeline corridor west of Niles Junction do not support a great variety of species. The most abundant species found in these areas include starlings (Sturnus vulgaris), house sparrows (Passer domesticus), house finches (Carpodacus mexicanus), and feral pigeons (Columba livia). The most abundant mammals are house mice, Old World rats (Rattus rattus), and probably a few bat species.

The salt ponds at the western end of the proposed corridor support few, if any, truly obligate salt marsh species. However, they are used by a variety of shorebirds and waterfowl for feeding and resting. A few bird species, including the Caspian tern (Hydroprogne caspia), Forster's tern (Sterna forsteri) and the black-necked stilt (Himantopus mexicanus) are known to nest on the dikes. The rare and endangered California least tern feeds in these ponds (EPA Region IX and URS, 1975).

Niles Canyon-EBDA Connection

The biotic resources along this route are virtually the same as for the Niles Canyon-South Bay Discharge alternative. The routes are identical from the beginning of the proposed pipeline to Niles Junction. The remaining land traversed by this alternative does not differ significantly from that of the South Bay Discharge alternative, except that the pipeline would not cross any salt evaporation ponds.

AQUATIC BIOLOGY

Suisun Bay Discharge

Freshwater

The Suisun Bay Pipeline route crosses or lies within 100 feet of the channels of several small creeks. Proceeding from the VCSD treatment plant northward along the proposed pipeline route, the creeks crossed are: Alamo Creek, South San Ramon Creek, San Ramon Creek, Walnut Creek, Pine Creek, Grayson Creek, and Pacheco Creek.

Flows in these creeks are primarily intermittent; the only perennial flows are in limited portions of San Ramon Creek and Walnut Creek. Intermittent flow forecloses the capacity of a stream to support permanent fish populations. Thus, the only permanent populations are found in the perennially flowing portions of Walnut and San Ramon creeks. Seasonally, during peak stream flow, fish may move upstream and downstream from the permanent flow regions and temporarily occupy other portions of these creeks.

The California Department of Fish and Game, the primary data source for freshwater fish, has no data for any of these streams. Species that could occur, on the basis of geographical range and habitat preferences, are the western sucker, carp, goldfish, Sacramento blackfish, hitch, Sacramento squawfish, western roach, speckled dace, fathead minnow, mosquitofish, either prickly or riffle sculpin, and threespine stickleback. Not all of these species are present, but without a detailed evaluation of the habitat provided by each stream, especially the occurrence of holes and ponds, a site-specific list cannot be constructed. In the permanent portions of these streams, shallow water depth and lack of sheltering vegetation are the most severe limitations to the occurrence of fish. The lower end of Pacheco Creek is tidal and a variety of brackish and estuarine species may be found in the creek during high tides.

Marine

The Suisun Bay Pipeline would ultimately discharge into Suisun Bay, the westernmost portion of the Sacramento-San Joaquin Delta, where tidal and seasonal outflow variations are greatest. The Delta is the most productive part of the San Francisco Bay

system. The biota in the region of the discharge area have been described in the Central Contra Costa County Wastewater Management Program EIR and EIS (1976). Photoplankton and zooplankton occur in relatively large concentrations compared to other parts of the bay. The primary phytoplankton constituents are diatoms. An important constituent of the zooplankton is the opossum shrimp, Neomysis sp., which is the principal food of juvenile and young striped bass. Copepods are also extremely common. Principal components of the benthos include polychaete worms, amphipods (Cerophium), and a clam (Mya). Fish of this region include both resident species such as the starry flounder and Delta smelt and anadramous (freshwater spawning) species such as striped bass, king salmon, white and green sturgeon, and American shad.

Niles Canyon-South Bay Dishcarge

Freshwater

Proceeding from the VCSD treatment plant to the discharge, the creeks crossed by the pipeline route are the Alamo Canal, Arroyo de la Laguna, and Alameda Creek. These creeks were described in the LAVWMA Draft EIS. No change has occurred in their status since that report was written. The creek has retained 9 out of 12 species of its presumed native fish fauna; this is a significant departure from the trend experienced in most coastal streams, i.e., loss of native species because of habitat degradation and replacement by introduced species. For this reason Alameda Creek above Niles should be considered a biologically sensitive area. Non-game fish have been more successful than native game fish. The fish found in Alameda Creek are listed in Table 2-1.

Table 2-1

FISH OF ALAMEDA CREEK[1]

Game Fish
largemouth bass
bluegill
green sunfish
Sacramento perch-native[2]
black crappie
white catfish
brown bull head
rainbow/steelhead trout-native[2]
Non-game Fish
lamprey-native[2]
threadfin shad
western sucker-native[2]
carp
goldfish
Sacramento blackfish-native[2]
hitch-native[2]
Sacramento squawfish-native[2]
mosquito fish
tule perch
prickly sculpin-native[2]
threespine stickleback-native[2]

1. California Fish and Game unpublished data
2. Aceituno, M.E., M.L. Caywood, S.J. Nichola, and W. I. Follett. 1976. Occurrence of Native Fishes in Alameda and Coyote Creeks, California. Calif. Fish and Game 62(3): 195-206.

Marine

The phytoplankton in the vicinity of the proposed outfall is comprised largely of diatoms. Most common types of zooplankton are larval and adult copepods. There are seasonal shifts in abundance of amphipods and cirriped (barnacle), polychaete, crab, fish, and molluscan larvae. The benthos is comprised principally of a number of polychaete (segmented) worms, and amphipod (Photis), and a clam (Tapes). Fish in this portion of the bay are mostly resident estuarine species; anadromous fish, such as the steelhead, pass through the area but because of flood control and water storage, there are no major spawning runs any longer.

Niles Canyon-EBDA Connection

Freshwater

Since this alternative follows the same corridor through Niles Canyon described above, the freshwater biological setting is the same as that described for the Niles Canyon-South Bay Discharge alternative in the LAVWMA Draft EIS.

Marine

This alternative terminates at the planned EBDA Interceptor at Alvarado; as a result, no marine habitats are encountered. The environmental setting at the EBDA discharge site at Bay Farm Island is discussed in the LAVWMA Draft EIS and in the EBDA Final EIS.

WATER QUALITY

Suisun Bay Discharge

As mentioned in the preceeding discussion of Aquatic Biology, flows in all the streams crossed by the pipeline route, with the exception of San Ramon and Walnut creeks, are intermittent. All of the streams show a wide variation in flow rates with peak flows occurring during the wet winter months and little or no flows occurring during the summer dry period (e.g., 1973 flows in Walnut Creek at Concord ranged from 2,130 cubic feet per second (cfs) in January to 9 cfs in July and August). Unfortunately, no water quality data are available for these streams.

The pipeline terminates at Suisun Bay in the vicinity of Pacheco Creek. At this point, the LAVWMA effluents would be discharged into the bay either via the existing CCC Sanitation District outfall or via a parallel outfall constructed by LAVWMA. The water quality of Suisun Bay is highly variable due to the effects of high tidal and seasonal freshwater outflow variations that occur in this portion of San Francisco Bay complex. An indication of this variation in physical/chemical quality is given in Table 2-2.

For further discussion of the water quality and hydrology of Suisun Bay, the reader is referred to the Draft EIS for the Central Contra Costa County Wastewater Management Program: Stage 5B Enlargements (1975).

Table 2-2

SUISUN BAY WATER QUALITY
NEAR CCC SANITATION DISTRICT OUTFALL
(mg/ℓ unless otherwise noted)

	RANGE	AVERAGE
BOD_5	0.4 - 3.2	1.4
Dissolved Oxygen	5.6 - 11.7	9.0
Turbidity (FTU)	4.5 - 110	26.4
Transparency (inches)	6.0 - 38	19
pH (pH units)	6.7 - 8.3	7.7
Organic Nitrogen	0.01 - 1.7	0.48
NH_3 - N	0.005 - 1.7	0.12
NO_3 - N	0.05 - 1.3	0.30
Total Phosphate (as P)	0.06 - 0.22	0.12
Chloride	12 - 9950	4833
Dissolved Silica	1 - 17	9.4
Chlorophyll-A (µg/ℓ)	0.69 - 31	6.8

Source: CCCSD, 1976.

Niles Canyon-South Bay Discharge

Surface waters crossed by this alternative include: Alamo Canal, Arroyo de la Laguna, and Alameda Creek. Due to the existing discharges of LAVWMA effluents to the waters of the Alameda Creek watershed, only Alamo Canal above the VCSD outfall has intermittent flows. Flows in Arroyo de la Laguna and Alameda Creek for the years 1970-1973 range from 6 to 2,350 cfs and 12 to 3,750 cfs, respectively. The water quality of these streams, particularly those receiving wastewater discharges, is relatively poor (e.g., TDS and nitrate water quality objectives for Alameda Creek are frequently exceeded). Average concentrations of TDS, chloride and nitrate in Arroyo de la Laguna and Alameda Creek are 753, 147, and 39 mg/ℓ, and 400, 67, and 10 mg/ℓ, respectively.

This alternative terminates in a submarine outfall located in South San Francisco Bay just north of the Dumbarton Bridge. Because of existing wastewater discharges into the South Bay, the water quality of the bay in the vicinity of this outfall is limited and subject to a certain amount of variation. A listing of the water quality characteristics of the South Bay is given in Table 2-3.

Additional discussion of the water quality and hydrology of waters within the LAVWMA study area (including the aforementioned surface streams and the South Bay) which might be affected by this alternative can be found in the LAVWMA Draft EIS.

Table 2-3
SOUTH BAY WATER QUALITY
(mg/ℓ unless otherwise noted)

	RANGE	AVERAGE
BOD_5	0.5 - 48	10.2
Dissolved Oxygen	0.7 - 8.3	5.1
Suspended Solids	15 - 165	55
Transparency (inches)	6 - 48	23
pH (pH units)	7.2 - 8.0	7.6
Ammonia Nitrogen	>0.1 - 11	3
Nitrate Nitrogen	0.05 - 1.1	0.35
Chlorosity (g/ℓ)	9.5 - 19	15
Dissolved Silica	2.3 - 16	8.7

Source: Pearson, et. al., 1970.

Niles Canyon-EBDA Connection

Since this alternative follows essentially the same route as the Niles Canyon-South Bay Discharge alternative, the surface streams affected by its implementation would be the same. However, in contrast to the preceding alternative the discharge outfall for this alternative would be located in the Lower San Francisco Bay at a point just north of the Oakland Airport (i.e., the EBDA outfall). Because this outfall is identical to that of the proposed project, the reader is referred to LAVWMA Draft EIS and the EBDA Final EIS for a description of the character of this portion of the Lower Bay.

ARCHEOLOGICAL AND HISTORICAL RESOURCES

An archeological survey which included a records search and a field reconnaissance of each of the pipeline routes was conducted by Holman and Chavez. In order to protect archeological sites from possible vandalism or disturbance by private collectors, the archeologist's report is only summarized here. Copies of the full archeology survey report are on file at the EPA Regional Office in San Francisco, at the State Water Resources Control Board in Sacramento, and at the Treganza Museum of San Francisco State University. A discussion of the regional archeological setting and ethnographic perspective as well as the history of European explorers and settlers is contained in the LAVWMA Draft EIS.

Suisun Bay Discharge

Three recorded archeological sites may lie within the immediate vicinity of the proposed pipeline -- Cco 241, Cco 133, and Cco 305. However, due to imprecise location descriptions and subsequent ground cover alterations and land use changes, none of these sites were located by the archeologic field survey.

A review of state historical resource inventories compiled by the State Office of Historic Preservation as well as communication with the County of Contra Costa did not reveal any listed historical resources within the path of the proposed pipeline construction.

Niles Canyon-South Bay Discharge

Much of this route has been surveyed previously as part of the LAVWMA Draft EIS. Changes from the previous Niles Canyon-South Bay Discharge route occur in the segment between the VCSD treatment plant site

and the head of Niles Canyon, and a short segment in Niles Canyon where old bridge piers were considered for the creek crossing instead of the existing bridge. No surface evidence of archeologic remains were identified along either of these segments during the most recent survey, nor were any evidence of remains identified along the remainder of the route during the previous field survey. One area near the head of Niles Canyon was identified as having a high potential for site location.

A review of state listings of historical resources published by the State Department of Parks and Recreation and communication with the Alameda County Planning Department revealed the presence of five historical sites within the immediate vicinity of the pipeline route. These are, from east to west, the Fages-Crespi Travel Route, Vallejo Mills Historic Park (California Historic Landmark (CHL) 46), Camino de Rancho San Antonio (CHL-229), Shinn Historical Park, and the Patterson-Ardenwood Estate.

The Fages-Crespi Travel Route is the route first traveled by Pedro Fages and Fray Juan Crespi on their trip back to Mission San Jose after journeying to the vicinity of Suisun Bay in the Spring of 1772. They proceeded along Arroyo de la Laguna, crossing it near Sunol and also crossing Alameda Creek before ascending Mission Pass (Hoover, et al., 1966). Thus, according to the above description the proposed pipeline route must cross the Fages-Crespi route, however, the trail is unmarked.

The boundaries of the Vallejo Historic Park, which contains the site of a flour mill built in 1853 by Jose de Jesus Vallejo and a stone aqueduct that carried water for the mill, would be traversed by the pipeline as presently proposed. This California historic landmark is located on the north side of Niles Canyon Road and east of Mission Boulevard (see Figure 1-13). The aqueduct parallels Niles Canyon Road on the north and would be very near the proposed construction zone.

Camino de Rancho San Antonio would be crossed by the pipeline route, however, the route in this area is no longer preserved intact.

Shinn Historical Park is located adjacent to the SP tracks and thus the proposed pipeline route between the railroad and Peralta Boulevard (see Figure 1-16). However, the pipeline would not traverse the park property.

The Patterson-Ardenwood Estate is located near Jarvis Landing, north of Thornton Avenue and west of Jarvis Road (see Figure 1-17). This estate was developed about 1860 and contains several structures, formal gardens, orchards, and a private forest deer park. The site is listed in the California Inventory of Historical Resources.

Niles Canyon-EBDA Connection

Two recorded archeologic sites may be located quite near the proposed route -- Ala 326 and Ala 327, however, neither of these sites were identifiable in the field.

Eight recorded historical sites appear to be adjacent to or very near the proposed route. These are, from east to west, the Fages-Crespi Travel Route, Vallejo Mills Historic Park, Niles Old Town Complex, Camino de Rancho San Antonio, the Essanay Studio Complex, the California Nursery Company Guest House (Vallejo Adobe), the Dinsmore-Harvey-Granger Store, and Commercial Buildings in Alvarado.

The location of the Fages-Crespi Travel Route, Vallejo Mills Historic Park, and Camino de Rancho San Antonio were described above for the Niles Canyon-South Bay Discharge alternative.

Niles Old Town Complex includes the general area that developed around Vallejo Mill at the mouth of Niles Canyon.

The Essanay Studio Complex occupies the block bordered by Niles Boulevard and Second Street between F and G Streets in Niles. The Essanay Company was one of the first motion picture studios located in California. A barn used for the first filming still stands at the rear of 37467 Second Street. Also, some of the cottages built by the company still remain standing, but the block-long studio has been razed.

The Guest House (Vallejo Adobe) of the California Nursery Company, located just off Niles Boulevard at Nursery Avenue, is the only historic site along any of the alternative routes that is on the National Register of Historic Sites. The SP tracks and the proposed pipeline route are located within a block of the site at the rear of the property.

The Dinsmore-Harvey-Granger General Store is located at the southeast corner of Smith and Vallejo Streets in Alvarado. The pipeline would pass along both of these streets.

In addition, various other unidentified commercial buildings in Alvarado are also listed in the California Inventory of Historical Resources.

LAND USE

Suisun Bay Discharge

The uses and ownership of the land crossed by the Suisun Bay Pipeline route are summarized below. Although the route appears to lie generally within a railroad right-of-way owned by Southern Pacific Railroad Company, numerous other uses and owners exist within the proposed pipeline corridor and must be considered.

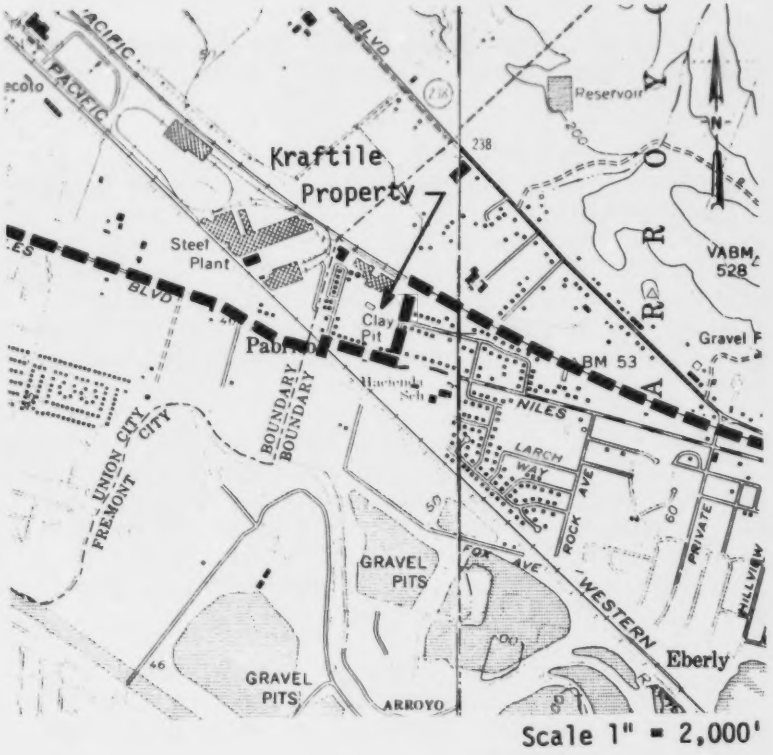
The route remains within the right-of-way of Stoneridge Drive as it leaves the VCSD plant. Just beyond the intersection of Stoneridge and Hopyard roads, the route turns north and proceeds along the east side of Hopyard Road between Hopyard Road and Chabot Canal. This portion of Chabot Canal and the adjacent land is owned by Willow West Incorporated, and the portion north of Willow West and south of I-580 is owned by Southern Pacific Land Company (Figure 2-1).

Willow West, Inc., recently received approval on a rezoning request that included a planned realignment of Chabot Canal to a location 1,000 feet east of Hopyard Road. The intent of this plan is to facilitate development of the east frontage of Hopyard Road. Presently, development in this area would require bridges for access across the canal. In addition, Chabot Canal floods periodically. The new canal would be large enough to safely combine Chabot and Hewlett canals located further to the east. The Alameda County Flood Control District has informally approved this plan as long as the new canal is built to its standards.*

* Brian Swift, City of Pleasanton Planning Department, February 28, 1977, personal communication.

Private Property

Figure 2-1. Suisun Bay Discharge Route



Private Property

Figure 2-2. Niles Canyon-EBDA Connection Route

Eventually, the City of Pleasanton intends to widen Hopyard Road eastward. This improvement may be combined with the realignment of the canal. It is not known when these proposed improvements will be made because the frontage property is not on the priority list to receive sewage service. This problem may delay the development of the property and the two improvements indefinitely.

Upon leaving the canal right-of-way, the pipeline route enters the I-580 right-of-way and heads east until it reaches the Southern Pacific Railroad line. Here the route enters the SP right-of-way. This right-of-way is not merely a buffer for the railroad tracks -- approximately 500 different persons or businesses have licensed agreements with Southern Pacific to use pieces of this corridor. Leasees include homeowners, utility companies, public agencies, businesses, and pipeline companies.

The route leaves the SP right-of-way where it intersects State Highway 4 in Contra Costa County. The route would either remain within the highway right-of-way here or it would traverse the edge of Buchanan Field. It then enters the CCC Sanitation District site.

Niles Canyon-South Bay Discharge

The Niles Canyon-South Bay Discharge Pipeline route would remain primarily within road or railroad rights-of-way, but it would also cross a limited amount of private lands and public watershed lands.

From the VCSD plant, this route crosses the northern edge of a parcel owned by Clorox, Corp., in an industrial area. The City of Pleasanton is not aware of any immediate plans for the development of this parcel of land. After crossing this parcel, the route turns south along the Alamo Canal right-of-way.

The route crosses under I-680 at the confluence of Arroyo Valle and Arroyo de la Laguna. From here it remains west of Arroyo de la Laguna as far as Castlewood Country Club. Some of the land along the creek is owned by the San Francisco Water Department; some is owned by the Country Club; other portions are owned by individuals. It is likely that the creek will eventually be "improved" by the Alameda County Flood Control District to provide protection from 100-year floods, although there are no immediate plans for this.*

The route jogs to the east along Castlewood Drive and then south along the Western Pacific Railroad line. From here it remains in railroad or county road rights-of-way, bypassing Sunol, until it enters Niles Canyon.

The route has been placed between the highway and railroads through Niles Canyon. Most of the land between these features is owned by the state or by the two railroads as rights-of-way. A few segments are owned by private individuals and a few by the San Francisco Water Department.

Niles Canyon is a recreational resource for residents of both the Niles-Fremont area and Sunol. In the past, a number of small private parks were operated along Alameda Creek. Only one of these, which includes a small restaurant and picnic tables, still operates. It is located just west of the

* Brian Swift, City of Pleasanton Planning Dept., March 3, 1977, personal communication.

Kaiser Plant and quarry. The sites of the other one-time parks are still used informally because they provide flat areas suitable for recreational activities.

Another busy recreational spot is the spillway located approximately one quarter mile northeast of the junction of Mission Boulevard and Niles Canyon Road. This is a favorite swimming spot of local children in the summer. Fishermen find access to the creek from any of the spots along the highway wide enough for parking a car.

Within the next five years, the East Bay Regional Park District (EBRPD) will be coordinating an extension of their Alameda Creek trail with Caltrans. Caltrans is planning to widen Niles Canyon Road and to construct hard surfaced 4-foot-wide shoulders for bike paths through the canyon. EBRPD will provide a trail for pedestrians and equestrians along the creek.

At the western end of Niles Canyon, the pipeline route is adjacent to the Vallejo Mill Historical Park. From west of Niles Canyon to the bay, the route remains on road or railroad rights-of-way. It passes through Niles Junction, orchards, residential and commercial neighborhoods in Fremont and Newark, then adjacent to a country club and salt evaporators, and finally through the San Francisco Bay National Wildlife Refuge. From here the route extends out into the bay.

Niles Canyon-EBDA Connection

The Niles Canyon-EBDA Connection Pipeline is identical to the above route from the VCSD plant through Niles Canyon.

At the west end of Niles Canyon, the route joins Niles Canyon Road before turning north onto Niles Boulevard. The City of Fremont is interested in redeveloping the properties in the northwest corner of this intersection. The route follows Niles Boulevard and later the Southern Pacific Railroad right-of-way through a corner of Fremont. The route crosses a parcel of land owned by Kraftile Company (Figure 2-2). This parcel is designated as "industrial" on Fremont's General Plan. The route of the pipeline across this parcel is also the route of a proposed extension of State Highway 84, the status of which is uncertain.

Upon returning to Niles Boulevard, the route crosses residential areas, abuts a large greenhouse complex, passes a few orchards and through the community of Alvarado before connecting with the EBDA force main at the Alvarado pumping station.

AESTHETICS

Suisun Bay Discharge

The pipeline route along the Southern Pacific Railroad line to Suisun Bay crosses a variety of landscapes. In Alameda County, the route crosses primarily agricultural lands between the VCSD treatment plant and the railroad line. Once within the railroad right-of-way, the pipeline route abuts industrial land, residential developments, orchards, cultivated fields, and unused lands.

At Danville, the route cuts through residential and business neighborhoods. For one stretch parallel to the downtown business district in Danville, the route is lined with two rows of tall trees.

These trees provide a visual and noise barrier for residents adjacent to the railroad.

The route is adjacent to one scenic highway -- I-580 in Alameda County. In addition, it is occasionally visible from San Ramon Valley Road, which is classified as a scenic thoroughfare in Contra Costa County's Scenic Highway Element.

Niles Canyon-South Bay Discharge

The Niles Canyon-South Bay Discharge route crosses several areas of high visual quality with present or potential public access. The route lies adjacent to Arroyo de la Laguna. This creek has recognized potential as a recreational site.* The route also passes through Niles Canyon, a scenic transportation corridor with existing recreational activities.

Finally, the route traverses the San Francisco Bay National Wildlife Refuge on State Highway 84. Although the refuge is still partially used for salt evaporation, its function as a refuge and wildlife observation area makes visual quality an important amenity.

Niles Canyon-EBDA Connection

The Niles Canyon-EBDA Connection Pipeline route follows Arroyo de la Laguna and Niles Canyon, as discussed above.

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* Brian Swift, Pleasanton Planning Department, March 3, 1977, personal communication.

TRANSPORTATION SYSTEMS

Suisun Bay Discharge

Existing traffic volumes for all major highways and arterials that would be disturbed by pipeline construction have been obtained from Caltrans, Contra Costa County, Alameda County, the City of Concord, and the City of Walnut Creek. Data representing average daily traffic (ADT) and peak hour traffic are presented in Table 2-4. Estimated levels of service provided by each road during rush hour are also shown. Level of service refers to the degree that travel speed is impeded and how the ratio of volume (or demand) to existing capacity is affected. "A" is a best case and "F" a worst case situation in relation to vehicle travel. A full definition of level of service is presented in Appendix B.

Congested traffic conditions presently occur in many places along the proposed pipeline route. Six roads that would either have to be crossed or paralleled currently provide a level of service of "D" or "E" in the area of proposed construction. Table 2-4 shows that these roads are Concord Avenue, Willow Pass Road, Monument Boulevard, Treat Boulevard, Ygnacio Valley Road, and Hopyard Road. All are operating at a "D" level of service during rush hours with the exception of Willow Pass Road (E). The peak hour volume on Willow Pass Road occurs during the 4:00 to 6:00 evening commute hours; however, traffic on both Willow Pass Road and Monument Boulevard remains steady throughout the day.

Ygnacio Valley Road is the major route through Walnut Creek and provides commuter access to I-680. As a result, this road provides a poor level of

APPENDIX A

Table 2-4

TRAFFIC VOLUMES ON MAJOR ROADS AFFECTED BY THE SUISUN BAY PIPELINE CONSTRUCTION

ROAD	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR	LOS[3]
Waterfront Road	300' East of Ulrich Oil Co.	3,049	545 am 810 pm	1975	B
State Route 4	Jct. with Solano Way	17,700	2300	1975	C
Solano Way	SP RR Crossing and Solano Way	8,800	NA[6]	1976	C
Concord Avenue	SP RR Crossing and Concord Ave.	30,000	2500[4]	1976	D
Willow Pass Road	SP RR Crossing and Willow Pass Road	46,000	3500	1976	E
Monument Boulevard	SP RR Crossing and Monument Boulevard	32,000	2800[5]	1976	D
Treat Boulevard	400' East of Cherry Lane	15,124 WB	2080 am 1012 pm	1974	D
	300' West of Del Hombre	14,786 EB	1008 am 1881 pm		
Ygnacio Valley Road	Jct. with Walnut Boulevard	29,000	2127 WB am 903 EB am 1167 WB pm 1948 EB pm	1977	D
Civic Drive	Jct. with Ygnacio Valley Road	NA[6]	1064 am 1248 pm	1976	C
Danville Boulevard	300' South of Rudgear Road	6,505	394 am 692 pm	1971	B
Walker Avenue	At San Miguel	8,045	514 am 766 pm	1975	B
San Ramon Valley Blvd.	400' South of Railroad Avenue	16,302	1169 am 1450 pm	1974	B
Sycamore Valley Road	100' West of Camino Ramon	10,925	701 am 1082 pm	1975	B

Table 2-4 (Continued)

TRAFFIC VOLUMES ON MAJOR ROADS AFFECTED BY THE SUISUN BAY PIPELINE CONSTRUCTION

ROAD	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR	LOS[3]
Greenbrook Drive	200' East of San Ramon Valley Blvd.	2,716 WB	329 am 265 pm	1976	B
	200' East of Camino Ramon	2,321 EB	107 am 301 pm		
Alcosta Boulevard	400' North of Old Ranch Road	834 NB	38 am 122 pm	1975	B
	200' North of Old Ranch Road	782 SB	87 am 61 pm		
Amador Valley Blvd.	363' NE of Brighton	1,848 EB	116 am 199 pm	1976	B
	363' NE of Brighton	1,523 WB	155 am 123 pm		
Dougherty Road	SP RR Crossing	3,999	271 am 365 pm		B
Hopyard Road	Between Valley Road and I580	24,900	2241		D

Source:
Caltrans, 1975 Traffic Volumes
Contra Costa County Department of Public Works
Alameda County Department of Public Works, Traffic Engineering
City of Concord, Department of Public Works
City of Walnut Creek, Department of Public Works, Community Development

1 - ADT = Average Daily Traffic; WB = West Bound Traffic only; EB = East Bound Traffic only; SB = South Bound Traffic only.

2 - Peak Hour Traffic Count; a.m. and p.m. refer to morning and afternoon peak hour traffic, respectively.

3 - LOS = Level of Service; these values are estimates only and are based upon professional judgments of the respective traffic engineers and URS Company.

4 - Estimated 1976 peak hour from 1972 data.

5 - Estimated 1976 peak hour from 1970 data.

6 - Data not available.

service during rush hours. Similarly, Hopyard Road, which provides access to and from I-580, has a poor level of service during commute hours.

The proposed pipeline would also cross BART and a Southern Pacific Railroad right-of-way. The actual pipeline route would replace or parallel an existing Southern Pacific line for most of the route. Some portions of the rail line are used almost daily (e.g., near the refineries) while other portions are used only twice a week. Southern Pacific has future plans to abandon the middle portion of the route (between Walnut Creek and the Contra Costa County line) pending a request to and approval from the Interstate Commerce Commission.

Niles Canyon-South Bay Discharge

Existing traffic volumes for all major highways and arterials that would be disturbed by pipeline construction for the Niles Canyon-South Bay Discharge are shown in Table 2-5. These data were obtained from Caltrans, Contra Costa County, and the City of Pleasanton. The estimated level of service for each road is also presented in Table 2-5.

The greatest traffic congestion along this proposed pipeline route occurs on State Highway 84 at its intersections with Fremont Boulevard, Highway 17, and Mission Boulevard. Recent resurfacing and resignaling of Mission Boulevard should eliminate some congestion at its intersection with Niles Canyon Road. The actual pipeline crossing would involve boring and jacking to avoid tearing up the newly constructed surface.

The pipeline would also meet the Southern Pacific and Western Pacific Railroad tracks north of Scotts Corner and in Sunol; the SP tracks would be crossed again at Niles. BART would also have to be crossed in Fremont.

Niles Canyon Road has a parallel hiking and bike trail that will be expanded as part of a joint Caltrans and East Bay Regional Parks project. The project will include construction of a horse trail. This project is in conjunction with a 5-year Caltrans plan to renovate and widen Niles Canyon Road.

Niles Canyon-EBDA Connection

Table 2-6 presents traffic data for the major roads that would be disrupted by construction of the pipeline to the Alvarado pumping station. Although the actual alternative would include the entire route from the VCSD Treatment Plant to Alvarado, the route is identical to the Niles Canyon-South Bay Discharge alternative until it reaches Mission Boulevard. Therefore, only traffic data from Mission Boulevard to Alvarado are included in Table 2-6.

In addition to Mission Boulevard, Niles Boulevard in Fremont and Alvarado-Niles Boulevard at the junction of Decoto Road are currently in the D level of service category during peak traffic periods. Smith Road also falls within this classification in Union City. In 1975, Alvarado-Niles Road was repaved and widened and has had its level of service greatly improved.

This alternative would also involve the crossing of Southern Pacific and Western Pacific rights-of-way and BART. The crossings are identical to the Niles Canyon-South Bay Discharge portion of the route

Table 2-5

TRAFFIC VOLUMES ON MAJOR ROADS AFFECTED BY THE NILES CANYON-SOUTH BAY DISCHARGE PIPELINE CONSTRUCTION

ROAD	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR	LOS[3]
Bernal Avenue	1000' SW Highway 680	2,269 EB	162 am 306 pm	1976	B
	1000' SW Highway 680	2,965 WB	453 am 195 pm		
Sunol Boulevard	East of Highway 680	11,900	1071	1975	C
Foothill Road	300' South of Verona Road	918	64 am 122 pm	1976	B
Pleasanton-Sunol Road	At Verona Road and SP RR Crossing	2,063	171 am 194 pm	1976	B
Kilkare Road	At SP RR Crossing	1,679	109 am 156 pm	1976	B
Palomeres Road	600' North of Niles Canyon Road	327	17 am 33 pm	1974	B
Niles Canyon Road (Highway 84)	Jct. with Palomeres Road	10,800	1400	1975	C
Niles Canyon Road (Highway 84)	South Jct. with State Route 238	16,400	1680	1975	C
Peralta Boulevard (Highway 84)	Jct. with Fremont Boulevard	31,500	3250	1975	D
Thornton Avenue (Highway 84)	Jct. with Nimitz Freeway	31,500	3200	1975	D
Thornton Avenue (Highway 84)	East of Cherry Street	17,200	2050	1975	C
Thornton Avenue (Highway 84)	Jct. with Jarvis Road	6,700	950	1975	C
Mission Boulevard (Highway 238)	Jct. with Peralta Boulevard	17,600	2000	1975	C
Mission Boulevard (Highway 238)	Jct. with Niles Canyon Road	27,500	2600	1975	D

Source:
Caltrans, 1975 Traffic Volumes
Contra Costa County, Department of Public Works, Traffic Department
City of Pleasanton, Department of Public Works, Traffic Department

1, 2, 3 See corresponding notes in Table 2-4

Table 2-6

TRAFFIC VOLUMES ON MAJOR ROADS AFFECTED BY THE NILES CANYON-EBDA CONNECTION PIPELINE CONSTRUCTION

ROAD	LOCATION	ADT[1]	PEAK HOUR[2]	YEAR	LOS[3]
Niles Boulevard	Sullivan Underpass	9,000	1170	1976	D
Niles Boulevard	Fremont City Limits	10,500	1365	1976	D
Alvarado-Niles Boulevard	Jct. with Decoto Road	10,700	1160	1976	D
Alvarado-Niles Boulevard	Jct. with Highway 17	21,700	2200	1976	B
Decoto Road	North of Niles Boulevard	12,800	1300	1976	C
Smith Road	Between Dyer Street and Union City Boulevard	6,500	650	1976	D
Union City Boulevard	Jct. with Smith Road	11,750	1200	1976	B

Source:
y of Fremont Department of Public Works
ty of Union City Department of Public Works

1, 2, 3 See corresponding notes in Table 2-4.

from the VCSD Treatment Plant to Mission Boulevard. Southern Pacific tracks would have to be crossed again near Mission Boulevard and Niles Road.

Each of the alternatives discussed above would also involve crossing a number of smaller roads and residential streets, especially within the incorporated areas. These roads and streets would not be as severely impacted as those roadways mentioned above.

NOISE

Suisun Bay Discharge

The existing noise environment along the proposed pipeline route is affected primarily by automobile and railroad traffic. Residential areas in San Ramon Village, San Ramon, Danville, Alamo, Walnut Creek, Pleasant Hill, and Monte Del Diablo experience noise levels between 60 and 76 dBA during peak traffic hours within 50 to 1500 feet of I-680 and State Highway 24.* Noise levels along the proposed pipeline corridor have been measured in excess of 65 dBA 420 feet on either side of the SP tracks (City of Pleasanton, 1973).

Specific noise sensitive receptors along the pipeline route include the San Ramon National Golf Club and several schools -- Wood School, San Ramon Valley High School, Montair School, Rancho Romero School, Murwood School, Las Lomas High School.

* Noise levels along this railroad line have been calculated using Galloway's linearized traffic noise formula. L_{50}=20 + 10 log V-10 log D + 20 log S; where V=peak hour traffic volume, D=receiver distance (ft), and S=speed (mph).

Fairoaks School, Cambridge School, Mt. Diablo High School, and Hillcrest School. Existing peak hour noise levels at most school boundaries are estimated to vary between 60 and 70 dBA, depending on the proximity to the roadway. The existing noise levels exceed HUD and DOT criteria in several locations.* However, assuming that buildings generally reduce noise levels from 15 to 30 dBA, existing noise levels inside residences and schools along the pipeline route are marginally acceptable.

Niles Canyon-South Bay Discharge

The existing noise environment along the proposed pipeline route is affected primarily by automobile and to a lesser extent, by railroad traffic. Residential areas in Sunol, Fremont, Newark, and rural areas experience noise levels of 74 dBA during peak traffic hours within 50 feet of I-680 and between 64 and 70 dBA during peak hours within 50 feet of Niles Canyon Road, Fremont Boulevard, and Thornton Avenue. Peak noise levels within 50 feet of the SP line from Sunol Boulevard to Fremont Boulevard are estimated to be between 76 and 85 dBA.**

Specific noise sensitive receptors along the pipeline route include, from east to west, Castlewood Country Club, Sunol Glen School, Holly Ghost School, Oliveria School, Thornton High School, Norris School, Cabrillo School, Muller School, Silva School, Newark Pavilion, Schilling School, and the Golf and Country Club near Jarvis Landing. Existing peak

* Noise criteria are fully discussed in Appendix H of the Draft EIS (November 1975).

** Based on noise levels generated by diesel locomotives, Report to the President and Congress on Noise, February 1972.

hour noise levels at these sensitive receptors probably vary between 50 and 65 dBA, depending on the roadway and distance. The existing noise levels exceed HUD and DOT criteria in a few locations. However, assuming that buildings generally reduce noise levels from 15 to 35 dBA, existing noise levels inside residences and schools along the pipeline route are marginally acceptable.

Niles Canyon-EBDA Connection

The existing noise environment along the proposed pipeline route is affected primarily by automobile traffic and to a lesser extent, by rail traffic on the SP Railroad between Sunol Boulevard and Pabrico. Residential areas in Sunol, Fremont, Union City, and rural areas experience noise levels between 60 and 70 dBA during peak traffic hours within 50 feet of Niles Canyon Road and Niles Boulevard, and 74 dBA during peak hour within 50 feet of I-680.

Specific noise sensitive receptors along the pipeline route include Castlewood Country Club, Sunol Glen School, Niles School, Hacienda School, James Logan High School, and Alvarado School. Existing peak hour noise levels at these sensitive receptors are estimated to vary between 51 and 65 dBA, depending on the roadway and distance. The existing noise levels exceed HUD and DOT criteria in a few locations. Assuming that buildings generally reduce noise levels from 15 to 30 dBA, existing noise levels inside residences and schools along the pipeline route are generally acceptable; in a few localities, however, the noise levels are only marginally acceptable. Peak noise levels along the SP right-of-way are estimated to be between 76 to 85 dBA 50 feet from the railroad tracks.

AIR QUALITY

Dust generation is an unavoidable, and the most significant, air pollution impact of construction activities. Therefore, suspended particulate air quality in the areas of pipeline construction is of most concern. Existing suspended particulate concentrations in the vicinity of each alternative pipeline corridor are discussed below.

Suisun Bay Discharge

There are two suspended particulate monitoring stations (Livermore and Concord) within the vicinity of the Suisun Bay Pipeline corridor. The Livermore station has recorded extremely high suspended particulate concentrations. The annual geometric mean in 1976 was 85 mg/m^3, well above the 60 mg/m^3 state standard. The state 24-hour standard is exceeded frequently. Suspended particulates are therefore a significant problem in the Livermore-Amador Valley. The Concord station recorded an annual geometric mean concentration of 51 mg/m^3 in 1976, below the annual standard. The state 24-hour standard is exceeded occasionally, however.

Sensitive receptors along the pipeline route include any residences or other places of human activity. The pipeline route follows the Southern Pacific right-of-way; however, the right-of-way passes near many residences, especially in the towns of Danville, Walnut Creek, Pleasant Hill, and Concord.

Niles Canyon-South Bay Discharge

The Livermore and Fremont monitoring stations record suspended particulate concentration in the

vicinity of this pipeline route. The Livermore air quality has already been described under the Suisun Bay Discharge alternative as being a significant problem. The suspended particulate annual average concentration in Fremont in 1976 was 62 mg/m^3, slightly higher than the 60 mg/m^3 state standard. The state 24 hour standard is exceeded occasionally, however.

Sensitive receptors along the Niles Canyon-South Bay Discharge are primarily residences in Fremont and Newark. The areas along Thornton Boulevard, in particular, would be close to construction activities.

Niles Canyon-EBDA Connection

The Niles Canyon-EBDA Connection route essentially passes through areas with the same air quality as the Niles Canyon-South Bay Discharge route. Sensitive receptors along the route are primarily residences in Fremont and Union City. Areas along Niles Boulevard, in particular, would be close to construction activities.

SECTION 3
POTENTIAL ENVIRONMENTAL IMPACTS

INTRODUCTION

This discussion focuses on the direct impacts that could be caused by the construction and operation of the proposed pipeline. Secondary impacts associated with population growth within the LAVWMA service area have been discussed previously in the LAVWMA Draft EIS. All potential impacts are presented in this section even though most of them can be adequately mitigated. Those impacts that could not or would not be adequately mitigated are discussed in Section 5.

In most instances, the impacts created by the proposed alternatives would be temporary and restricted to the actual construction phase of the project. Such impacts include traffic disruption, construction noise and dust, the displacement of wildlife or the destruction of vegetative cover, increased stream siltation, and the interruption of recreational activities. However, some construction-related impacts would be long-term or permanent. Examples of long-term impacts include the consumption of mineral resources, destruction of wildlife, and potential conflicts with geologic hazards.

GEOLOGY

In discussing the geologic problems associated with the construction and operation of the proposed export pipelines, a distinction is made between geologic hazards or limitations and geologic impacts. Geologic hazards and limitations refer to those aspects of the existing geological environment that could have impacts on the proposed project if they are not recognized and planned for in the design and construction of the project. In contrast, geologic impacts refer to the potential changes the project would incur on the existing geologic conditions along the pipeline route.

Suisun Bay Discharge

Potential geologic hazards or limitations for pipeline construction along this proposed route include fault displacement, earthquake ground shaking, trench wall instability, excavation difficulties, and corrosive soils.

As discussed earlier in Section 2, the pipeline would cross two potentially active fault zones -- the Pleasanton Fault and its northward extension,

and the Concord Fault. Both of these faults are considered capable of displacement during an earthquake; the Concord Fault also has a potential for continued tectonic creep (Slossen, 1974). Such fault movement could cause damage to the buried pipeline resulting in leaks.

In addition to fault displacement, the pipeline would be susceptible to ground shaking during earthquakes. The effect of ground shaking on the sediments, and thus the pipeline, would be dependent on the physical properties of the sediments beneath and surrounding the pipeline, and on the earthquake magnitude and the location of the earthquake epicenter. In general, areas that suffer the most damage from ground failure during major earthquakes are those underlain by loose, water-saturated sediments. Since a site-specific geotechnical survey of the pipeline route has not been performed, a specific evaluation of potential ground failure due to earthquake shaking is not possible. In general, however, the potential would be greatest along the northern segment of the pipeline route where it crosses water-saturated bay mud deposits.

Some trench-wall instability problems can be expected in the urban areas of the pipeline route where deep unconsolidated alluvial soils exist and where vertical trench walls would be required in order to limit the width of the open trench and thus limit traffic disruption. Other potential problem areas occur at stream crossings where groundwater seepage would cause sandy soil to "run" unless the area is dewatered or continuous sheeting is used. Trench wall stability problems can be easily overcome by lessening the slope of the trench walls where space permits or by bracing or sheeting in areas where vertical side walls are necessitated.

Most of the excavation for the pipeline probably would be accomplished with conventional earthmoving equipment; however, some localized areas of shallow rock in the vicinity of Walnut Creek may require heavy ripping or blasting. In addition, a dragline or clamshell might be needed to excavate the soft bay mud at the northern end of the pipeline and outfall.

According to soil mapping and interpretation done by the U.S. Soil Conservation Service in Contra Costa County, most of the soils along the pipeline route are highly corrosive to untreated steel pipe. This fact, coupled with the clayey nature of the soils, would tend to preclude the use of these natural soils for trench backfill. Soil testing along the pipeline route would be needed to determine the suitability of existing soils as a source of backfill, however.

Potential geologic impacts associated with the construction and operation of the proposed pipeline include consumption of mineral resources, loss of topsoil, disposal of excavated material, increased erosion, and problems related to possible pipeline leaks.

Mineral resources would be consumed in the fabrication and emplacement of the pipeline. Steel, concrete, and miscellaneous mineral resources would be consumed in the fabrication of nearly 31 miles of pipe. Gravel or crushed rock from local quarries would be needed for a one-foot-thick pipe bed in the bottom of the trench. Assuming that the natural soils cannot be used as backfill, imported fill material would also be required for trench backfill. The volume of bedding material is estimated at 89,000 cubic yards while the maximum amount of imported backfill is estimated at 430,000 cubic yards.

Unless specific arrangements are made to stockpile the topsoil that would be excavated during trenching operations, this material would be disposed of offsite. Assuming that none of the soils and sediments along the route would be suitable as backfill, then nearly 533,000 cubic yards of material would have to be disposed of offsite. If a suitable construction or landfill operation cannot be found for the disposal of this material during construction operations, it may have to be disposed in one of the area's sanitary landfills. The impact of disposing this material in a sanitary landfill is dependent on how it is used. For example, if the material is used as covering material at the Acme Sanitary Landfill, it would have the beneficial effect of reducing the volume of material that presently must be quarried from a nearby hill; however, if it is disposed as waste it would have the adverse effect of reducing the remaining life of the fill area.

Construction activities would also expose soil to increased erosion during the period of construction and, until vegetation is reestablished, along the pipeline route. Areas of highest potential for increased erosion occur at stream crossings and within the tidal zone at the outfall location.

Spills or leaks that could develop in the pipeline either due to seismic events or pipeline corrosion could create adverse geologic impacts such as undermining of street foundations.

Niles Canyon-South Bay Discharge

Potential geologic hazards or limitations for pipeline construction and operation along this route include fault displacement, ground shaking from earthquakes, trench-wall instability, excavation difficulties, stream bank erosion, and slope failure.

The pipeline would cross two potentially active fault zones -- the Calaveras-Sunol Fault and the Hayward Fault. Tectonic creep has been observed along both faults in the vicinity of the pipeline crossings; thus, there is a potential for pipeline damage from these movements or fault rupture.

As discussed above for the Suisun Bay alternative, ground shaking during a strong earthquake on either of these faults or the San Andreas Fault could cause ground failure in the form of liquefaction or densification, particularly in the loose water-saturated sediments along the edge of the bay.

Trench excavation in Niles Canyon might require heavy ripping or local blasting in areas where shallow, indurated bedrock is encountered. In the loose sediments of the bayside plain, some trench-wall stability problems requiring continuous sheeting may be encountered particularly in restricted rights-of-way where nearly vertical side slopes would be required.

Because of the extremely narrow construction zone available along certain segments of the Niles Canyon route due to the steep-sided canyon walls, slope failure due to landslides or stream bank erosion could cause damage to the buried pipeline.

Potential impacts created by the construction and operation of a pipeline along this route would include short-term stream erosion, consumption of mineral resources, loss of topsoil, disposal of excavated materials, topographic alteration and problems associated with leaks along the pipeline.

Some increase in erosion along Alameda Creek can be expected during pipeline construction activities particularly at the two planned crossings of the creek. The degree of the erosion impact would be dependent on the stream flow conditions during and immediately following the construction activities and the degree of adherence to mitigation measures contained in California Department of Fish and Game Streambed Alternation Permits. In addition to the potential adverse impact that increased erosion and siltation would have on downstream aquatic life, the groundwater percolation ponds on the Niles Cone also could be adversely affected by fine grained sediment reducing the permeability of these ponds. This impact would be greatest if it occurred during the low-flow dry season when most of the recharge to the Niles Cone aquifers takes place.

Mineral resources would be consumed in the fabrication of the pipeline and local sand and gravel would be consumed as pipe bedding and trench backfill. Approximately 74,000 cubic yards of bedding material and a maximum of 265,000 cubic yards would be required.

The excavation of trench nearly 25 miles long by 6 feet deep and 5 feet wide would result in having to dispose of 443,000 cubic yards of material. There is some possibility of Caltrans using this material for a planned bike path through Niles Canyon, but this would depend on the timing of the two projects since the excavated material could not be stockpiled within the canyon.

Some alternation of the existing topography along the proposed route through Niles Canyon could result from excavation and grading activities. The creation of cut and fill slopes could have a long-term effect on slope stability.

The only expected operational impact upon the geologic environment would be leaks in the pipeline. Such leaks, caused by fault displacement or seismic ground failure, could have adverse effects on roadbeds.

Niles Canyon-EBDA Connection

The geologic hazards and potential impacts associated with this alternative are essentially the same as those discussed above for the Niles Canyon-South Bay Discharge alternative. The only difference would be the volume of trench material that would require offsite disposal and the volume of trench bedding and backfill material that would have to be imported. Approximately 404,000 cubic yards of material would be excavated while 85,000 cubic yards of pipe bedding and 305,000 cubic yards of trench backfill would be required for the 23 mile-long pipeline.

TERRESTRIAL BIOLOGY

Suisun Bay Discharge

Because little native or highly productive vegetational habitat need be permanently damaged, this alternative is considered less destructive than the selected project.

If the existing sewage outfall line at the CCC Sanitation District were considered satisfactory both for present usage and for the additional load imposed by implementation of this alternative, there would be no significant adverse impacts associated with the project. All construction would occur on land that has already been disturbed. Because streams that would be crossed by the pipeline are

already channelized at the point of crossing, no riparian vegetation would be damaged by construction. Some trees near the project corridor would suffer root damage. This might result in some minor reduction of songbird and small mammal habitat. Dust and noise generated in the process of construction might scare away local populations of wildlife, but they would become reestablished after the construction was completed.

If an additional outfall line is needed, the project could result in elimination of a small corridor of salt marsh, about 20-feet wide by 400-feet long, on the edge of Suisun Bay. Because this habitat type has been severely reduced and because the endangered salt marsh harvest mouse is an obligate resident of this habitat, even a small loss must be considered significant.

Niles Canyon-South Bay Discharge

Because a substantial amount of critical habitat would be disrupted, this alternative is considered more damaging than the selected project. The most severe impacts associated with this alternative involve the potential for destruction of riparian vegetation in Arroyo de la Laguna and next to Alameda Creek in Niles Canyon, and the potential loss of two California black walnut trees.

Available information shows the proposed pipeline running down Arroyo de la Laguna for a distance of approximately 2 miles. Construction of a pipeline here would necessitate the destruction of a 25-foot-wide, 2-mile-long corridor, or approximately 6 acres of riparian vegetation. Riparian zones have been designated primary critical habitats by the California Department of Fish and Game. The endangered California yellow-billed cuckoo is dependent upon this habitat. Riparian vegetation has already been severely reduced throughout California. Any further reduction is a significant adverse impact. In addition to the loss of intrinsic and habitat values of streamside vegetation, streambank stability would be reduced and the stream would suffer an increased sediment load. Because the pipeline would cross the arroyo where a bridge has already been constructed and the streamside vegetation has already been disturbed, the impact of pipeline construction would be less at that location than it would elsewhere.

Most of the pipeline corridor in Niles Canyon avoids Alameda Creek, but where the creek runs to the north of Niles Canyon Road, riparian woodland might be destroyed as a result of pipeline construction. Elsewhere in the canyon, the road shoulder is quite narrow and pipeline construction would probably entail removal of and root damage to roadside trees. This would reduce the wildlife habitat and aesthetic values of the canyon's vegetation.

One of the California black walnut trees near the western end of Niles Canyon Road is south of the road; thus, it should be spared damage if construction equipment remains on the north side of the road. The other black walnut tree, located where the Southern Pacific Railroad trestle crosses the road, may be within the pipeline corridor. The tree could be exposed to root suffocation from soil compaction by heavy machinery, and might in fact be removed. Either of these effects would be a significant adverse impact on the native vegetation.

While some disruption is predicted for the rest of the proposed pipeline corridor, the impacts would be neither long-lasting nor severe. The urban, grassland, and agricultural regions that the pipeline would cross are already populated by adventitious plant species that would be likely to recolonize the area soon after construction activities were completed. Similarly, the wildlife using this habitat is adapted to fluctuating environmental conditions.

Even in the salt ponds near the Dumbarton Bridge, no permanent damage is anticipated. If the pipeline remains exposed above the water or is covered by a dike, it could serve as a perch or even a nesting site for birds. The disturbance associated with construction would scare away some birds. These birds would then have to compete elsewhere for food; however, so few birds would be displaced that the resulting increase in population density elsewhere would be negligible. Furthermore, the daily time period of disturbance would be so short that construction would virtually not affect the survival of any individuals.

Niles Canyon-EBDA Connection

The impacts predicted for this alternative are essentially the same as those associated with the Niles Canyon-South Bay Discharge alternative. This alternative would not involve any interaction with the birds in the salt evaporation ponds near the bay.

AQUATIC BIOLOGY

Suisun Bay Discharge

Freshwater

The freshwater impacts of the Suisun Bay route are the same as those of the Boehmer Summit route. Both are minor since no major habitats occur along either alignment. Marine construction impact would be greater if a new outfall is constructed for the Suisun Bay Discharge alternative.

Construction of the pipeline would have little effect upon the intermittent creeks associated with this alternative: Alamo Creek, South San Ramon Creek, Pine Creek, Grayson Creek, and Pacheco Creek. Fish populations have been eliminated in these creeks by previous channelization or excluded by low flow conditions. However, there may be permanent fish populations in San Ramon and Walnut creeks and these could be impacted. Removal of vegetation in the stream channels, disturbance of the stream bed by construction equipment, erosion from exposed soil with subsequent sediment deposition in the streambed, and dumping solid and liquid wastes in the stream are frequent accidents of construction that cause the death of fish and degradation of habitat (refer to the LAVWMA Draft EIS). In these small creeks, such impacts are likely to be long-term rather than short-term.

Diversion of treated effluent from discharge to surface waters to the Suisun Bay Pipeline would reduce flows in Alameda Creek. Reduced flow would permanently diminish the capacity of the creek to support fish unless additional releases from upstream reservoirs are made. This effect has been described in the LAVWMA Draft EIS.

Marine

Construction of a new outfall, should that be part of this alternative, would disturb bottom sediments and cause mortality of benthic organisms within the construction area. Construction would also create a suspended sediment load and a zone of turbidity in the construction area; such turbidity would depress primary production of phytoplankton and cause fish to avoid the area. These effects would be short-term. Benthic species would recolonize the bottom within a few months. Fish and plankton would resume normal levels and patterns of activity as soon as the turbidity has dispersed, probably within a few days or weeks.

Because the addition of LAVWMA effluent to the CCC Sanitation District discharge would not create any water quality impacts, there would be no significant impact upon aquatic life. As described in the CCC Sanitation District Final EIS, a benthic community distinct from the surrounding benthos would be created around the outfall. This occurrence which takes place at all effluent outfalls is caused by localized water quality conditions. In this case the effluent would be fresher than the receiving water and would be lower in dissolved oxygen, suspended solids and many other parameters. Due to the increased volume of the discharge, the size of the area affected may be expected to increase by about 5 percent.

Niles Canyon-South Bay Discharge

The impact of pipeline construction in Niles Canyon is much greater than construction along the I-580 corridor. Construction of a marine outfall near Dumbarton Bridge would have a much greater impact than would the selected project since an EBDA outfall would be constructed at Bay Farm Island in any case. The Dumbarton outfall would create additional construction impacts and water quality degradation.

Freshwater

Potential construction impacts, i.e., removal of vegetation, stream bed disturbance, sedimentation, and release of wastes, would damage both fish and habitats in Alameda Creek, particularly in Niles Canyon. Fish would probably reproduce from the surviving population and could even be restocked. Habitat degradation would probably be long-term.

The construction of a pipeline to carry wastewater would result in decreased flow in Alameda Creek, resulting in an adverse impact upon fish populations, particularly in Niles Canyon. The capacity of the creek to flush out sediments and toxic materials decreases markedly as flow is decreased. This impact has been discussed in the LAVWMA Draft EIS.

Marine

Construction of the pipeline and outfall would cause short-term disburbance of benthic, planktonic, and fish species. Benthos, killed wherever excavation occurs, would recolonize the site within a few months. There is a small bed (less than one acre) of soft-shell and Japanese littleneck clams at the east end of the Dumbarton Bridge. The littleneck clam is adversely affected by suspended sediment but the soft-shell clam is not. Plankton productivity and fish occurrence would diminish during construction but recover within a few days or weeks.

Operational impacts of this alternative are unchanged from those described in the LAVWMA Draft EIS, i.e., creation of an "outfall" benthic community in response to the difference in water quality between the mixing zone and the ambient receiving water. This effect is also discussed under the Suisun Bay discharge alternative.

Niles Canyon-EBDA Connection

The impact of pipeline construction in Niles Canyon is much greater than construction along the I-580 corridor. Operationally, the two routes are the same since they share the EBDA outfall.

Freshwater

Potential construction impacts, i.e., removal of vegetation, stream bed disturbance, sedimentation, and release of wastes, would adversely affect both fish and aquatic habitats in Alameda Creek, particularly in Niles Canyon. Fish can be replaced but habitat degradation is long-term and can only be mitigated by costly restoration. Damage can be prevented by careful construction practices. Prevention of damage would be extremely important because operation would reduce flows in the creek and greatly increase the time required for recovery.

Construction of a pipeline to carry wastewater would result in decreased flow in Alameda Creek and would adversely affect the fish populations, particularly in Niles Canyon. This impact has been discussed in the LAVWMA Draft EIS.

Marine

There would be no marine construction for this alternative. The EBDA Final EIS contains a description of the impact of the Bay Farm Island outfall construction.

Operational impacts of this alternative are unchanged from those described in the EBDA Final EIS, i.e., creation of a localized "outfall" community of benthic organisms in response to the difference in water quality between the mixing zone and the ambient receiving water. This effect is also discussed under the Suisun Bay discharge alternative. Because the LAVWMA effluent would increase the volume of the discharge by about 6 percent, the area of the outfall community would increase less than 1 percent over that for the EBDA effluent alone.

WATER QUALITY IMPACTS

Suisun Bay Discharge

The water quality impacts of this alternative are basically the same as those of the selected project, although potential changes in the nutrient standards for Suisun Bay discharges may cause future standard violations. Such violations would make this alternative less desirable than the proposed project.

The construction of the Suisun Bay discharge would have some potential for water quality impact. However, because this alternative would make use of the proposed CCC Sanitation District outfall, its impact would be limited to localized water quality effects resulting from pipeline construction in or near creeks in the Walnut and Alameda creek water-

sheds. The primary water quality effects would be locally increased sediment loads; because of their short-term nature, these loads would not be significant.

Operation of this alternative would result in a reduction of surface water flows in the Alameda Creek watershed. The effects of this reduction would include a diminishing of local groundwater recharge. A more complete analysis of these effects is contained in the LAVWMA Draft EIS. In order to evaluate the impacts of this alternative's discharge of effluents to Suisun Bay, several criteria are used. These include the minimum dilution criteria of the Regional Water Quality Control Board, San Francisco Bay Region, the National Pollutant Discharge Elimination System (NPDES) permit and Ocean Plan requirements for wastewater effluents, and the EPA criteria for receiving water quality. It has been assumed that if the proposed discharge could meet these criteria, their level of impact on the waters of Suisun Bay would be acceptable.

As noted previously, this alternative would involve the use of the proposed CCC Sanitation District outfall as the mechanism for discharge of LAVWMA effluents to Suisun Bay. The proposed CCC Sanitation District facility will itself discharge up to 45 million gallons per day (MGD) through this outfall by the mid-1990's. Based on minimum initial dilution analyses carried out by Environmental Quality Analysts (1972) for the expected CCC Sanitation District effluents, this outfall would have an initial dilution of at least 15:1. This is considered a worst-case and assumes a low current speed (0.5 knots), a discharge of 45 MGD (occurring in 1992), and the containment of the entire effluent field within the top one-third of the water column.

The minimum dilution criteria set for this discharge by the Regional Water Quality Control Board is 10:1. If the projected 1998 LAVWMA discharge of 15.6 MGD ADWF (average dry weather flow) is added to these worst-case conditions, this criteria would still be met. The LAVWMA addition would result in an increase in the outfall's discharge and a subsequent reduction of the initial dilution of roughly 25 percent. Thus, the minimum initial dilution for the combined discharges under these new worst-case conditions would be expected to be 11:1. This dilution level would still satisfy the dilution criteria.

At present, the precise character of the LAVWMA effluents in the 1990's is not known. By law, these effluents must meet the NPDES permit and Ocean Plan requirements before they can be discharged into Suisun Bay. Recent project reports for the proposed LAVWMA facility (Carollo Engineers, 1976) have stated that such compliance should present no major problems considering the high level of treatment that LAVWMA wastewaters currently receive (e.g., the only facility addition needed to insure compliance would be a dechlorination process). Thus, in lieu of an exact characterization, the likely NPDES requirements for the discharge provide a good estimator of the expected LAVWMA effluent quality. Table 3-1 presents these expected effluent values predicted through the direct use of the NPDES and Ocean Plan requirements.

Since it has been assumed that the LAVWMA effluents would meet the NPDES permit requirements, the only remaining criteria to be met is the EPA criteria for receiving waters. Before evaluating the probable impact of these effluents on the receiving waters, the actual character of the combined effluents being

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Table 3-1

EXPECTED LAVWMA EFFLUENT CONCENTRATIONS
(mg/ℓ unless otherwise noted)

BOD_5	30
Suspended Solids	30
pH (pH units)	6-9
Oil and grease	10
Ammonia (as N)	40
Unionized ammonia	0.64
Arsenic	0.01
Cadinium	0.02
Chlorine, Residual	0.0
Chromium, Total	0.005
Copper	0.2
Cyanide	0.1
Lead	0.1
Mercury	0.001
Nickel	0.1
Phenolic Compounds	0.5
Silver	0.02
Zinc	0.3
Total Identifiable Chlorinated Hydrocarbons	0.002
Biossay: Percent Survival in 100% Effluent (%)	90

NOTE: Some of the above constituents should, in practice, have markedly lower values than predicted through the use of the NPDES and Ocean Plan requirements (eg., current BOD_5 and suspended solids levels in the BCSD plant are 4 mg/ℓ and 2 mg/ℓ respectively). Thus, the above listing should be considered as a worst-case analysis.

SOURCE: SWRCB, 1972; and RWQCB, 1977.

discharged from the CCC Sanitation District outfall must be determined. Table 3-2 presents an estimate of the expected outfall effluent character based on a total mid-1990 discharge of 60 MGD (15 MGD from the LAVWMA facility and 45 MGD from the CCC Sanitation District plant). This table also gives the average water quality of Suisun Bay and its subsequent water quality following a 10:1 dilution of the effluent discharge within it. A listing of the EPA receiving water quality criteria is given for comparative purposes. Based on a comparison of these criteria with the expected receiving water quality following dilution, all criteria are met except for coliform, copper, and mercury concentrations. These criteria violations, however, result not from the discharge, but from the already high ambient levels (i.e., the removal of the discharge would have no effect on their levels). In fact, for roughly half of the parameters listed, the expected concentrations of the outfall effluents are less than current Suisun Bay concentrations. For this reason, it appears that this discharge would actually improve the quality of the receiving waters, rather than degrade them. Thus, within the framework of the assumptions made, it appears that the discharge of LAVWMA effluents to Suisun Bay would not have any significant water quality impacts.

It should be noted, however, that one potential problem area remains. While Table 3-2 indicates that the proposed discharge would meet the EPA criteria for ammonia, there is a possibility that the receiving water standard for this particular discharge may be raised in the near-future. Such an increase could result in a standard violation.

Niles Canyon-South Bay Discharge

The water quality impacts of this alternative would be greater than those of the selected project. In particular, the possibility for violation of the South Bay dissolved oxygen standard could lead to a significant reduction in the water quality of the South Bay.

This alternative would require not only the crossing of several streams in Alameda Creek watershed, but also the construction of a submerged outfall at a point just north of the Dumbarton Bridge. Of these two construction activities, the outfall construction has the greater potential for significant water quality impact. The impacts associated with stream crossings are primarily limited to the occurrence of increased sediment loads and are relatively short-term in nature. The construction of the proposed outfall, on the other hand, would probably result in locally increased suspended sediment levels, decreased dissolved oxygen concentrations, and the re-suspension of trace materials in the waters of the South Bay. While the extent to which these effects occur cannot be determined without a detailed analysis of the physical and chemical properties of the outfall site, they probably would be relatively localized and short-term in nature.

The operational effects of this discharge would be long-term in nature. The diversion of treated effluent from surface-water discharge to the Niles Canyon Pipeline would reduce flows in Alameda Creek. The effects of such a reduction (e.g., reduced groundwater recharge) are discussed in the

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Table 3-2

EXPECTED OUTFALL AND RECEIVING WATER CONCENTRATIONS
(mg/ℓ unless otherwise noted)

	OUTFALL EFFLUENT CONCENTRATIONS	AVERAGE SUISUN BAY QUALITY	RECEIVING WATER QUALITY W/10:1 DILUTION OF EFFLUENTS	EPA CRITERIA FOR RECEIVING WATER QUALITY
BOD_5	10	0.4-3.2	1.4-3.9	None
Dissolved Oxygen	1-2[1]	5.6-11.7	5.2-10.8	5.0 minimum
D.O. Saturation (%)	10-20[1]	95	>85	>80 annual median
Suspended Solids	11	35-110	33-100	None
Total Coliforms (MPN/100 mℓ)	22[1]	700-20,000	640-18,200[2]	<240
pH (pH units)	7-7.5	6.7-8.3	7-7.5	±0.2 from natural
Oil and grease	5	1-2	1-2	None
Sulfide, dissolved	0[1]	<0.1	<0.1	<0.1
Ammonia (as N)	10	0.12	1.1	--
Unionized Ammonia	0.16	0.002	0.018	<0.4[3]
Arsenic	0.003	0.03	0.03	<0.05
Cadmium	0.007	0.01	0.01	<0.03
Chlorine, Residual	0	--	--	<0.01
Chromium, Total	0.003	0.02	0.02	<0.1
Copper	0.06	0.07	0.07[2]	<0.05
Cyanide	0.03	--	--	<0.01
Iron	0.16[1]	0.1	0.1	<0.3
Lead	0.05	0.009	0.01	<0.05
Mercury	0.0009	0.005	0.005[2]	<0.001
Nickel	0.03	--	--	<0.1
Phenolic Compounds	0.13	--	--	--
Silver	0.017	--	--	<0.0005
Zinc	0.1	0.07	0.07	<0.1
Total Identifiable Chlorinated Hydrocarbons	0.001	--	--	--
Bioassay: Percent Survival in 100% Effluent (%)	93	--	--	--

1 For important parameters for which no values were given in Table 3-1, the outfall value is assumed to be approximated by the expected CCCSD values.
2 Values exceed recommended EPA receiving water quality criteria (EPA, 1972). However, in all cases exceedence is a result of the existing Suisun Bay quality and not attributable to the proposed outfall discharge.
3 Proposed receiving water quality standard for NPDES permit is 0.025 mg/ℓ (RWQCB, 1977).

Source: CCCSD, 1976; URS, 1977; and EPA, 1972.

LAVWMA Draft EIS. In order to assess the impacts of a South Bay discharge, the following criteria are used: the Regional Water Quality Control Board (RWQCB) minimum initial dilution criteria, the NPDES permit and Ocean Plan effluent requirements, and the EPA criteria for receiving water quality.

While it is expected that the RWQCB dilution criteria of 10:1 would be met, sufficient studies have not been conducted to date to make an exact determination of the outfall's dilution potential. Similarly, no detailed characterization of the expected wastewater effluent quality is available. Initial design studies carried out by Carollo Engineers (1976) indicate that the likely NPDES and Ocean Plan requirements can be met without major difficulty. Indeed, LAVWMA intends, and is in fact legally obligated, to construct a facility that would meet all relevant effluent limitations. For this reason, it is assumed that the likely effluent requirements for the discharge provide a good estimator of the expected LAVWMA effluent quality. Working from this assumption and knowing the quality of existing South Bay waters, a quick approximation can be made relative to the compliance of this discharge with the EPA receiving water quality criteria. Such an approximation is made in Table 3-3. As is evident from the table, all criteria are met except for dissolved oxygen and total coliforms. The coliform levels are a result of the existing high coliform levels found in the South Bay and not due to the discharge itself. The projected dissolved oxygen violation, on the other hand, is significant.

There is considerable disagreement as to whether such a violation of the dissolved oxygen standard would occur. Modeling studies for the South Bay area have reached different conclusions relative to this question (RWQCB, 1977). These studies, which are much more comprehensive than the above analysis, have set forth two differing pictures:

1. The dissolved oxygen water quality standards in the South Bay cannot be achieved regardless of the outfall location within the South Bay.

2. The dissolved oxygen water quality standards can be achieved in the area of the South Bay that would be affected by the proposed LAVWMA discharge and the discharge would not cause non-compliance with the standards.

Because of these differences and the likelihood that their resolution would not occur within the time remaining before project selection is required, it must be assumed that this alternative would have significant water quality effects.

Niles Canyon-EBDA Connection

The impacts of this alternative would be the same as those of the selected project, primarily because they share the same outfall.

Construction impacts on water quality resulting from this alternative would be relatively minor. As was the case with the Suisun Bay discharge, this alternative involves the use of an outfall that is being constructed as part of another facility (i.e., the EBDA outfall above Oakland Airport). Thus, the impacts of this alternative are limited to the effects of pipeline construction in creeks crossed by the

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Table 3-3

EXPECTED OUTFALL AND RECEIVING WATER CONCENTRATIONS
(mg/ℓ unless otherwise noted)

	OUTFALL EFFLUENT CONCENTRATIONS[1]	AVERAGE SOUTH BAY QUALITY	RECEIVING WATER QUALITY W/10:1 DILUTION OF EFFLUENTS	EPA CRITERIA FOR RECEIVING WATER QUALITY
BOD_5	5.0	10.2	9.7	None
Dissolved Oxygen	1-2	5.1	4.7-4.8[3]	5.0 minimum
D.O. Saturation (%)	10-20	55	>50	>50 annual median
Suspended Solids	5.0	55	50	None
Total Coliforms (MPN/100 mℓ)	10-50	8,000	7,200[3]	<240
pH (pH units)	6-9	7.7	7.5-7.8	±0.2 from natural
Oil and grease	5.0	1-4	1.4-4.1	None
Sulfide	0	<0.1	<0.1	<0.1
Ammonia (as N)	2.0	0.8	1.1	--
Unionized Ammonia	0.03	0.013	0.015	<0.4[2]
Arsenic	0.01	--	--	<0.05
Cadmium	0.02	<0.005	0.007	<0.03
Chlorine, Residual	0.0	--	--	<0.01
Chromium, Total	0.005	0.025	0.023	<0.1
Copper	0.2	0.0015	0.02	<0.05
Cyanide	0.1	--	--	<0.01
Lead	0.1	0.015	0.02	<0.05
Mercury	0.001	<0.0002	0.0003	<0.001
Nickel	0.1	0.002	0.01	<0.1
Phenolic Compounds	0.5	0.0036	0.05	--
Silver	0.02	--	--	<0.0005
Zinc	0.3	0.002	0.03	<0.1
Total Identifiable Chlorinated Hydrocarbons	0.002	0.00005	0.0002	--
Bioassay: Percent Survival in 100% Effluent (%)	90	--	--	--

1 Effluent values are based on likely NPDES and Ocean Plan effluent requirements (RWQCB, 1977 and SWRCB, 1972) and the typical effluent levels to be expected for the treatment processes being used (Metcalf & Eddy, 1972).
2 Proposed receiving water quality standard for NPDES permit is 0.025 mg/ℓ (RWQCB, 1977).
3 Values exceed recommended EPA receiving water criteria (EPA, 1972). However, in the case of total coliforms, exceedence is a result of the existing South Bay quality and not attributable to the proposed outfall discharge.

Source: SWRCB, 1972; RWQCB, 1977; Metcalf and Eddy, 1972; Pearson, et. al., 1970; and EPA, 1972.

alternative's conveyance corridor. These effects, as mentioned previously, would be limited primarily to short-term and localized increases in the sediment loads of these streams.

Similarly, the water quality impacts of the operation of this alternative would be associated primarily with the EBDA outfall. A previous analysis of the effects of the inclusion of LAVWMA effluents in the EBDA discharge is contained in the LAVWMA Draft EIS and the EBDA Final EIS. The effects of flow reduction in Alameda creek due to effluent export are also addressed in the LAVWMA Draft EIS and include a local reduction in the amount of groundwater recharge.

ARCHEOLOGICAL AND HISTORICAL RESOURCES

Suisun Bay Discharge

Potential archeological and historical impacts associated with this alternative would be the same or somewhat less than the selected project. Although no archeologic sites along the pipeline route were identified during a field survey, three recorded sites -- Cco 241, Cco 305, and Cco 133 -- might be located within the SP right-of-way since written location descriptions are lacking or imprecise. Thus, although no known archeologic site would be disturbed by the pipeline construction, there is the possibility that buried sites could be discovered during trenching activities. No historical sites would be disturbed by the project.

Niles Canyon-South Bay Discharge

Potential archeological and historical impacts associated with this alternative would be somewhat greater than the selected project. No known archeological sites would be disturbed by pipeline construction; however, there is the possibility of uncovering buried archeological remains during trenching activities.

The pipeline as planned would pass along the southeastern margin of Vallejo Mills Historic Park at the mouth of Niles Canyon, in the Niles district of Fremont. Although no structures within the park would be directly disturbed by pipeline construction, dust and noise would have a temporary adverse effect on the use of the park.

Niles Canyon-EBDA Connection

The potential archeological and historical impacts associated with this alternative are essentially the same as those discussed for the Niles Canyon-South Bay Discharge alternative.

LAND USE

Suisun Bay Discharge

The potential for land-use conflict from this alternative, considering that there are more than 500 licensed agreements to use the SP right-of-way, is considerably greater than the potential for land-use conflict of the selected project.

The first potential land-use conflict from this project is along the portion of the route that lies between Hopyard Road and Chabot Canal. There

is not much room for placement of a pipeline between the road and canal and the City of Pleasanton has expressed an interest in possibly widening the road in the direction of the canal, which would make the corridor even narrower. Secondly, the private owner of the canal would like to fill it and build a new canal 1,000 feet to the east of Hopyard Road. The existence of a pipeline along the old canal alignment under this arrangement would impede the future land development envisioned for the frontage area. These problems must be resolved during the final design stages of the project.

Another potential impact of the project would be the disruption of activities on the lands leased by SP to other persons, firms, or agencies. These lands are used as extensions of backyards or businesses, or as pipeline or utility corridors. During the construction of the pipeline, it may be necessary to remove some fences and temporarily disrupt existing uses of these properties. The extent and location of such disruptions would be determined during the final design stages of this project.

Niles Canyon-South Bay Discharge

Potential land-use conflicts associated with this alternative are public in nature, while those associated with the selected project are limited to a few privately owned parcels. Potential land-use impacts associated with a Niles Canyon-South Bay Discharge pipeline would appear greater than those associated with the selected project.

Three areas along the Niles Canyon-South Bay Discharge route present potential land-use conflicts. The first is along Arroyo de la Laguna. Depending on the exact routing, the construction of the pipeline could affect its potential future use as a recreational creek by damaging visual and vegetation amenities. Also, the location of the pipeline and its affect on the aesthetics and vegetation of this area could influence the Alameda Flood Control District's choices in eventually providing 100-year flood protection along the creek.

The route through Niles Canyon also presents potential land-use conflicts. Construction of a pipeline would temporarily disrupt recreational activities along the river and at the Vallejo Mill Historical Park. Also, there is some reluctance by the Caltrans and the two affected railroad companies to let LAVWMA use their rights-of-way through Niles Canyon. Along much of the canyon, these rights-of-way are adjacent to one another, leaving no space for the pipeline route between them.

The third potential conflict is at the proposed National Wildlife Refuge at the western end of the route. Construction activities could temporarily disrupt wildlife observation by frightening birds or otherwise being incompatible with activities associated with the refuge.

Niles Canyon-EBDA Connection

The possible land-use conflicts along Arroyo de la Laguna and through Niles Canyon appear greater than those of the selected project.

The potential problems discussed above, along Arroyo de la Laguna and Niles Canyon, would also be associated with a Niles Canyon-EBDA Connection Pipeline. In addition, there may be a need for coordination with the State Department of Transportation

for the route segment in Fremont that crosses between the Southern Pacific Railroad and Linda Drive. State Highway 84 was previously proposed to extend across this same route. This section is owned by Kraftile Company. They intend to mine the property for clay. The proposed alignment of the pipeline would curtail mining on the eastern edge of Kraftile's property (Figure 2-2).

AESTHETICS

Suisun Bay Discharge

The impacts on aesthetics for the Suisun Bay Discharge would be equivalent or slightly greater in magnitude to those of the selected project.

Impacts on visual quality would result from construction activity and associated debris accumulation along the route. These activities would temporarily disrupt the visual amenities of the residential and business neighborhoods crossed by the railroad line, and perhaps necessitate removal of some trees along the route. In addition, drivers along Scenic Highway I-580 and San Ramon Valley Road could find the views from those two roadways interrupted by the construction activity.

Niles Canyon-South Bay Discharge

The potential impacts on visual aesthetics associated with the construction of this alternative would appear greater than those of the selected project.

Construction of the pipeline could be visually unattractive along its entire length, but special concern is warranted along three particular segments. First, the construction of a pipeline along Arroyo de la Laguna could result in a loss in riparian vegetation and other special scenic qualities of the creek. Construction activity along Niles Creek would impact views of automobile drivers and recreationists. Lastly, construction activity would adversely affect scenic quality temporarily at the proposed National Wildlife Refuge.

Niles Canyon-EBDA Connection

The same potential visual quality impacts discussed above -- visual disruption along Arroyo de la Laguna and Niles Canyon -- would also be of concern for a Niles Canyon-EBDA Connection Pipeline. Once again, these potential impacts seem greater than those associated with the selected project.

TRANSPORTATION SYSTEMS

Each pipeline alternative, including the selected project (I-580-EBDA Connection), would have severe short-term impacts upon traffic. This is particularly true in urban areas where major arterials would be crossed or, even worse, would have to paralleled in a narrow right-of-way, thereby closing lanes for some distance. The two alternative routes through Niles Canyon appear to pose the greatest potential for traffic impacts because the right-of-way is narrow and the pipeline would have to pass directly under State Highway 84 in some instances. The line that continues to Alvarado along Alvarado-Niles Road would also impact heavily upon this newly paved thoroughfare, again due to a narrow right-of-way.

Suisun Bay Discharge

Although the proposed pipeline would be located within an existing Southern Pacific Railroad right-of-way throughout most of its length, it would cross I-580, I-680, and a number of major city and county arterials as well as many less heavily traveled local streets in Concord, Walnut Creek, and Pleasanton. In addition, the pipeline probably would have to cross the SP tracks several times. The crossings at the interstate freeways, state highways, and railroads would all be accomplished by boring and jacking or using existing undercrossings. This would result in only minor traffic disruption of these thoroughfares. City or county permit engineers may require boring and jacking at other major pipeline crossing points if they deem it necessary.

The major arterials at which pipeline construction would disrupt traffic are shown in Table 2-4. The disruption would be particularly severe at the pipeline crossing with Concord Avenue, Willow Pass Road, Monument Boulevard, Treat Boulevard, Ygnacio Valley Road, and Hopyard Road. At these points, the traffic is congested and any further disruption would exacerbate the situation further. Such disruption would be worst at peak traffic times when the movement of construction equipment and personnel, coupled with the removal of traffic lanes, would cause traffic delays.

Niles Canyon-EBDA Connection

This proposed alternative route would also cross many major roads and streets and would pass through Niles Canyon on an extremely narrow right-of-way. The major disruption points would occur along State Highway 84 in Niles Canyon where the pipeline would, in some instances, have to be constructed essentially in the middle of the highway. Although traffic could possibly be routed around these narrow crossing points by careful planning prior to construction, state law requires that travel lanes cannot be blocked by future pipeline repairs. Therefore, it is doubtful that the entire line would be approved by Caltrans unless specific design measures that would eliminate the need for future roadway disruption are incorporated. The proposed pipeline route could also impact the Southern Pacific and Western Pacific railroad rights-of-way, especially through Niles Canyon.

The State Highway 84 renovation project could be affected by this alternative, especially if the pipeline is constructed after the road had been improved and the bike trail, horse trail, and hiking trail had been completed. If the pipeline is constructed in conjunction with this project, some problems could be eliminated. If the pipeline ever had to be repaired where it lies directly under the road, however, traffic would be severely disrupted in violation of state law.

From the western end of Niles Canyon, the EBDA Connection route would parallel Niles Boulevard and Alvarado-Niles Road in Fremont and Union City, respectively. Traffic along Niles Boulevard is quite heavy and pipeline construction at the Sullivan underpass and at the Fremont-Union City border would result in severe impairment, the degree depending upon how and when construction is undertaken. Although Alvarado-Niles Road is currently providing an acceptable level of service, the right-of-way narrows as one approaches State Highway 17

and construction activities would entail the tearing up of one lane of newly paved road. Therefore, the permit procedure may require Union City traffic officials to include extensive mitigation measures in the permit in order to maintain traffic flow and retain as much of the new road surface as possible.

Smith Road would also be paralleled once the pipeline crosses State Highway 17 and would disrupt traffic on this route depending upon how close to the road surface the pipeline is constructed. Traffic at the intersections of Union City Boulevard and Smith Road, and Decoto Road and Alvarado-Niles Road would also be impaired. Fortunately, the northern intersection of Decoto Raod and Alvarado-Niles Road, which the pipeline would cross, is about 45 percent less traveled than the southern intersection.

This route would cross BART and the Southern Pacific Railroad rights-of-way and parallel part of the SP line west of Mission Boulevard. The newly completed renovation of Mission Boulevard north of State Highway 84 would also have to be crossed, but boring and jacking should minimize these impacts.

Niles Canyon-South Bay Discharge

From the VCSD treatment plant to Mission Boulevard at the west end of Niles Canyon, the traffic impacts would be identical to those discussed for the Niles Canyon-EBDA Connection alternative.

A critical traffic area associated with this alternative is that portion of State Highway 84 between the Dumbarton Bridge and downtown Newark. Construction activities during commute hours would be extremely disruptive to an already poor traffic situation. Strong mitigation measures would be necessary in order to keep traffic disruption to a minimum.

NOISE

Construction noise would be the only significant noise impact of the proposed alternatives; operational noise impacts of buried pipelines would be insignificant. Because noise generated by construction activities is normally of short duration and highly variable, it is considered more annoying than a continuous noise level of long duration. Construction noise impact criteria are based upon speech interference and are related to intensity and frequency of occurrence. Whenever the noise level exceeds 45 dBA, moderate speech interference occurs and whenever the noise level exceeds 60 dBA, appreciable speech interference occurs. The upper level, 60 dBA, was established by assuming that noise-induced speech interference would be intolerable (at distances greater than 1 meter) for noise levels in excess of 60 dBA. Therefore, the higher the noise level over 60 dBA, the more disturbance will result; the less steady the level of a noise, the greater the distraction and annoyance. Based on this information, construction noise impact criteria for noise-sensitive areas (e.g., hospitals, schools, residential communities, recreational areas) have been established (Table 3-4).

TABLE 3-4

CONSTRUCTION NOISE IMPACT DETERMINATION

DURATION OF NOISE	NUMBER OF OCCURRENCES PER HOUR OVER 60 dBA		
	LESS THAN 5	5 to 10	MORE THAN 10
Less than 1	Small	Moderate	Large
1 to 3	Moderate	Large	Significant
More than 3	Large	Signifi-cant	Significant

The most prevalent noise sources at construction sites are equipment powered by internal combustion engines. Earthmoving equipment, cranes, concrete mixers, dump trucks, pumps, electric power generators, and air compressors radiate noise levels of 70 to 95 dBA at 50 feet from the equipment. Pumps, generators, and compressors are generally stationary sources that radiate fairly constant noise levels when operating. Mobile sources, however, radiate varying noise levels depending on operating conditions and loads. Typical noise levels during ground-clearing and excavations of public work projects range between 84 to 88 dBA.*

Adverse noise effects would occur only during the construction period. It is estimated that heavy work on each construction stretch (about one to two blocks) would be completed in approximately one week. Thus, the approximate duration of the noise impact would be about one week and limited to daytime hours.

* Source: Anon., Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, Dec. 1971.

During pipeline hole-digging and ground-clearing phases, rocky formations may be encountered on the site that are too large and too hard to be broken up with tractors equipped with rippers and backhoes. Jackhammers or blasting is needed to break up this material. Possible impacts associated with blasting include sudden pressure changes that are transmitted through the air as noise or through the earth as ground vibration. Normally, the effects of blasting are annoying because they are unpredictable and highly variable.

Suisun Bay Discharge

Residences along most of the pipeline route are within 50 feet of the right-of-way and would be exposed to noise levels between 84 to 88 dBA during the construction period. Assuming building noise attenuation is between 15 to 30 dBA, the indoor noise levels should be below the minimum hearing damage risk level of 70 dBA except during unusual circumstances. However, indoor noise level would most likely exceed 60 dBA through much of the construction period, creating significant speech interference and annoyance to residents in San Ramon Village, San Ramon, Danville, Alamo, Walnut Creek, Pleasant Hills, and Monte Del Diablo.

Schools along the pipeline route would also be adversely affected. Outdoor activity at Wood School, Montain School, San Ramon Valley High School, Rancho Romero School, Murwood School, Las Lamas High School, and Fairoaks School, and Mt. Diablo High School would be affected by construction noise, especially in those areas close to the pipeline right-of-way. Because school buildings at San Ramon Valley High School, Murwood School, Las Lamas High School, and Fairoaks School are within

300 feet of the construction site, indoor noise levels would exceed 60 dBA limit of appreciable speech interference during construction. Since a 6 dBA drop in noise level occurs as distance from the source is doubled, the other schools mentioned in Section 2 should be less affected, although construction noise would be noticeable. Construction noise would also be audible in some areas of the San Ramon National Golf Club.

Some offsite noise impacts must be expected as fill and gravel is brought to the construction site and excavated material is removed from the construction site. The impacts associated with the haul routes cannot be evaluated at this time because specific routes are unknown.

Niles Canyon-South Bay Discharge

Residences in Sunol, Fremont, and Newark are within 50 feet of the pipeline right-of-way and would be exposed to noise levels between 84 and 88 dBA during the construction period. Assuming building noise attenuation is between 15 to 30 dBA, the indoor noise levels should be below minimum hearing damage risk level of 70 dBA, except during unusual circumstances. However, indoor noise levels would most likely exceed 60 dBA through much of the construction period, creating significant speech interference and annoyance during the construction period.

Schools along the pipeline route would also be adversely affected. Outdoor activity at Sunol Glen School, Thornton Junior High School, Norris School, Cabrillo School, Silva School, Muller School, and Schilling School would be affected significantly by construction activities. Because school buildings at Thornton Junior High School, Norris School, Silva School, Muller School, and Schilling School are within 300 feet of the construction right-of-way, indoor noise levels at these sites would exceed the 60 dBA limit of appreciable speech interference during construction. The other schools should be less affected, though construction noise would be noticeable.

An additional noise impact along Foothill Road, Niles Canyon Road, Peralta Boulevard, Fremont Boulevard, and Thornton Avenue must be expected as fill material is brought to the construction site and excavated material is taken away. Also, outdoor noise impact is expected at Castlewood Country Club, Newark Pavilion, and the golf and country club near Jarvis Landing.

Niles Canyon-EBDA Connection

In many locations along the pipeline right-of-way residences are within 50 feet of the construction activities. Residents at these locations would be exposed to noise levels between 84 and 88 dBA. Assuming building noise attenuation is between 15 to 30 dBA, the indoor noise levels should be below the minimum hearing damage risk level of 70 dBA except during unusual circumstances. However, indoor noise levels would most likely exceed 60 dBA through much of the construction period, creating significant speech interference and annoyance to residents in Sunol, Fremont, and Union City.

Outdoor activity at Castlewood Country Club, Sunol Glen School, Niles School, Hacienda School,

James Logan High School, and Alvarado School would be significantly affected, especially in those areas close to the pipeline right-of-way. Because school buildings at Alvarado School are within 300 feet of the construction site, indoor noise levels would exceed the 60 dBA limit of speech interference during pipeline construction. Since a 6 dBA drop in noise level occurs as distance from the source is doubled, the other noise-sensitive areas should be less affected, although construction noise would be noticeable.

Noise impact along Foothill Road, Niles Canyon Road, and Niles Boulevard would be expected as fill material is brought to the site and excavated material is transported away from the area.

AIR QUALITY

Air quality impacts of the Suisun Bay Discharge, Niles Canyon-South Bay Discharge, and Niles Canyon-EBDA Connection alternatives would be similar to the selected project. All routes have many residences along the route that could be adversely affected by nuisance dust.

Emissions from construction vehicles and dust generation from disturbed earth would be the primary sources of air pollutants for all alternative routes. Emissions from construction vehicles are usually not significant beyond the construction site or with relatively small construction projects (e.g., pipeline construction). Dust generated by construction activities, however, can be significant. Although the amount of land cleared during pipeline construction is not great, large amounts of dust can be generated from disturbed land and dirt piles, especially during windy conditions. Although ambient air quality standards for suspended particulates would be violated at times near the construction sites, the generated dust is more of a nuisance than a health hazard. The impact of dust generation is temporary and mitigable.

UTILITIES AND ENERGY CONSUMPTION

Fossil fuels would be the main form of energy consumed during construction of each of the alternatives; electrical energy would be the primary energy required for facility operation. Pipeline construction would require energy to manufacture the pipe and other equipment as well as energy to lay the pipeline. Pipeline length would be the most significant factor in evaluating the manufacture energy needed because length is related directly to the amount of pipe needed to construct each of the viable alternatives.

Diesel oil would be the primary fuel consumed by grading and excavation equipment. Gasoline would be consumed by portable electric generators, pumps, and other equipment during construction activities. Pipeline length would be the main factor determining the construction impacts because it determines both the amount of equipment and overall time needed for each of the alternatives.

As shown in Table 3-5, the selected project would consume the least amount of energy for pipe manufacture and construction activities. The remaining alternatives listed in order of decreasing energy consumption are Niles Canyon-South Bay Discharge, Niles Canyon-EBDA Connection, and Suisun Bay Discharge.

A comparison of the annual electric energy demand and a description of the power and head during 1980 is shown in Table 3-6. The Niles Canyon-South Bay Discharge and the Niles Canyon-EBDA Connection would require the least electrical energy and horsepower. The Suisun Bay Discharge would require 6 times the energy as the previous two alternatives, while the selected project would consume 12 times as much electrical energy as the two Niles Canyon alternatives.

Although the electric demands of any of the alternatives would represent an insignificant percentage of Pacific Gas & Electric Company's (PG&E) total system-wide generating capacity, it would have an incremental impact on the consumption of energy within the PG&E system.

Table 3-5

COMPARISON OF ANNUAL ENERGY DEMANDS FOR
WASTEWATER TREATMENT ALTERNATIVES

ALTERNATIVES	POWER REQUIRED		MAXIMUM POWER DEMANDS (1000 Kwhr/yr)
	POWER (Horsepower)	PRESSURE Head (ft.)	
Selected	2,500	490	12,000
Niles Canyon-South Bay Discharge	125	25	1,000
Niles Canyon-EBDA Connection	125	25	1,000
Suisun Bay Pipeline	1,000	190	6,000

Source: CH2M-Hill, 1977.

SECTION 4
MITIGATION MEASURES PROPOSED FOR ADDITIONAL WASTEWATER MANAGEMENT ALTERNATIVES

INTRODUCTION

The following discussion outlines suggested or recommended mitigation measures for the potential impacts identified in Section 3.

GEOLOGY

Preparation of a detailed geotechnical report for the selected alternative and the adherence to the recommendations contained in such a report regarding pipeline design, location, and construction is the first step in mitigating the potential geologic hazards and impacts. A state-registered soils engineer or engineering geologist should be present during construction activities in order to inspect the trenching and backfilling operations. These field inspectors can detect variations in soil conditions that may require modifications of design. Also, field and laboratory tests should be conducted during construction to evaluate the quality of workmanship and materials used. The above recommendations are normal engineering operating procedures that would undoubtedly be followed during subsequent design and construction work.

Of particular importance would be the precise location of the active fault traces once trenching begins and the recommendations for minimizing the effect of fault displacement.

TERRESTRIAL BIOLOGY

Suisun Bay Discharge

If a new outfall line into Suisun Bay is not required, no mitigation measures are necessary. If a new outfall must be constructed, steps should be taken to ensure that the marsh is not permanently damaged. This would be best accomplished by carefully removing the existing vegetation and the upper foot of soil, stockpiling these next to the construction corridor where they would be inundated by tides, and replacing them after construction has been completed.

There is no way to realign the pipeline to further minimize the amount of marsh that would be crossed. The current project route is already aligned to cross the narrowest band of marshland in the vicinity.

Niles Canyon-South Bay Discharge

To minimize the impact on riparian vegetation, the pipeline route in the vicinity of Arroyo de la Laguna should be changed. One possible route would involve crossing the arroyo at its intersection with I-680, and continuing south to the Western Pacific Railroad line. The pipeline would then follow the western side of the tracks until it merged with the current alignment. Another possibility would be to cross I-680 at Arroyo de la Laguna, as currently planned, and then proceed directly southwest to Foothill Road. The pipeline would follow the eastern shoulder of this road to Pleasanton-Sunol Road, where it would cross the stream as currently planned. At the very least, the riparian woodland should be strictly avoided by building the line further from the stream in open ground parallel to its current alignment.

The section of pipeline along Niles Canyon Road should be built completely within the road shoulder. In some places, it may not be possible to do this; damage to some trees may be unavoidable.

In the interest of preserving naturally occurring individuals of the native flora, it is imperative that the California black walnut trees near the western end of Niles Canyon Road be avoided by all heavy equipment. A distance of at least 20 feet from the trunk of each of these trees should be maintained to avoid soil compaction that could lead to root suffocation.

Niles Canyon-EBDA Connection

Potential mitigation measures for this alternative are identical to those for the Niles Canyon-South Bay Discharge alternative.

AQUATIC BIOLOGY

Mitigation of impacts to freshwater habitats and fish populations can be accomplished using the same techniques for all three alternatives. Vegetation that grows in the stream bed, on the banks, or overhangs the banks should not be removed except where absolutely necessary for the placement of the pipeline. Erosion and sediment control techniques should be employed whenever the pipeline comes within 100 feet of a stream. Construction equipment and foot traffic should be kept away from the stream bed. Habitat degradation associated with construction activities can be reversed only by expensive habitat restoration efforts.

Spills of oil and fuel should be diked and contained, not washed into a stream. All solid wastes, including lumber, cement, and trash should be removed from the construction site daily, not left to be recovered at the end of the project.

The operational impact of reduced stream flow in Alameda Creek can only be mitigated by providing another source of water. Additional discharge from Calaveras Reservoir is the most attractive method since it provides high quality, cool water. Other sources are less desirable but would have beneficial effects.

WATER QUALITY

Mitigation of construction impacts (i.e., excessive sediment loads) can be achieved through the use of erosion and sediment control techniques whenever construction occurs in or near surface streams. Similarly, the effects of reduced surface flows in the Alameda Creek watershed resulting from effluent export can be mitigated by the provision of another

source of water for groundwater recharge. Potential sources of supplemental water are primarily limited to those waters stored in local reservoirs and/or imported waters. Mitigation of the impacts of effluent discharge into Suisun Bay and South San Francisco Bay is technically possible but would be very expensive (e.g., if the nutrient standards for Suisun Bay were tightened, it would probably be necessary to include denitrification as part of the treatment process).

ARCHEOLOGICAL AND HISTORICAL RESOURCES

Before construction begins on any of the discussed alternatives, detailed alignment plans should be made available to a qualified archeologist who could then determine if any additional field surveys are required. During the trenching activities, a qualified archeologist should be on hand to monitor specific segments of the alignment where buried sites may be located. If any archeological resources are uncovered when a qualified archeologist is not present, one should be contacted to determine the significance of the resources and make recommendations to preserve or salvage the resource. Such recommendations should be cleared through the State Office of Historic Preservation.

If at all possible, all cultural resources encountered along the route should be preserved intact by relocating the pipeline. However, if relocation is impractical, excavation of the site should be permitted prior to continued disturbance by construction activities.

The proposed outfall site for the South Bay Discharge alternative and for the Suisun Bay Discharge alternative, if required, should have underwater archeologic surveys performed prior to locating the outfall.

LAND USE

Suisun Bay Discharge

The potential conflict of the routing of the pipeline at Chabot Canal with future land uses could be resolved by moving the proposed alignment of the pipeline to coincide with the proposed realignment of Chabot Canal (Figure 4-1). The result would be to eliminate any future land use conflict, assuming that Chabot Canal is realigned as planned. Under this option, the cultivated croplands occupying the site would be temporarily disrupted by the construction of the pipeline 1,000 feet east of Hopyard Road.

During the final design stages of the pipeline route, any interference with SP lands leased to other entities should be avoided as much as possible. After construction, any disrupted property should be restored to its original condition.

Niles Canyon-South Bay Discharge

The length of the pipeline route, which lies west of Arroyo de la Laguna, should be placed a sufficient distance from the creek to avoid disturbance of the creek's natural environment. The close proximity of the pipeline to the creek could also influence the future choice of flood protection for the creek in two ways: 1) if the visual quality of the creek is disturbed, channelization of the creek might appear more practical than if the creek remains untouched; and 2) if the pipeline is located too near the creek's west bank, flood control

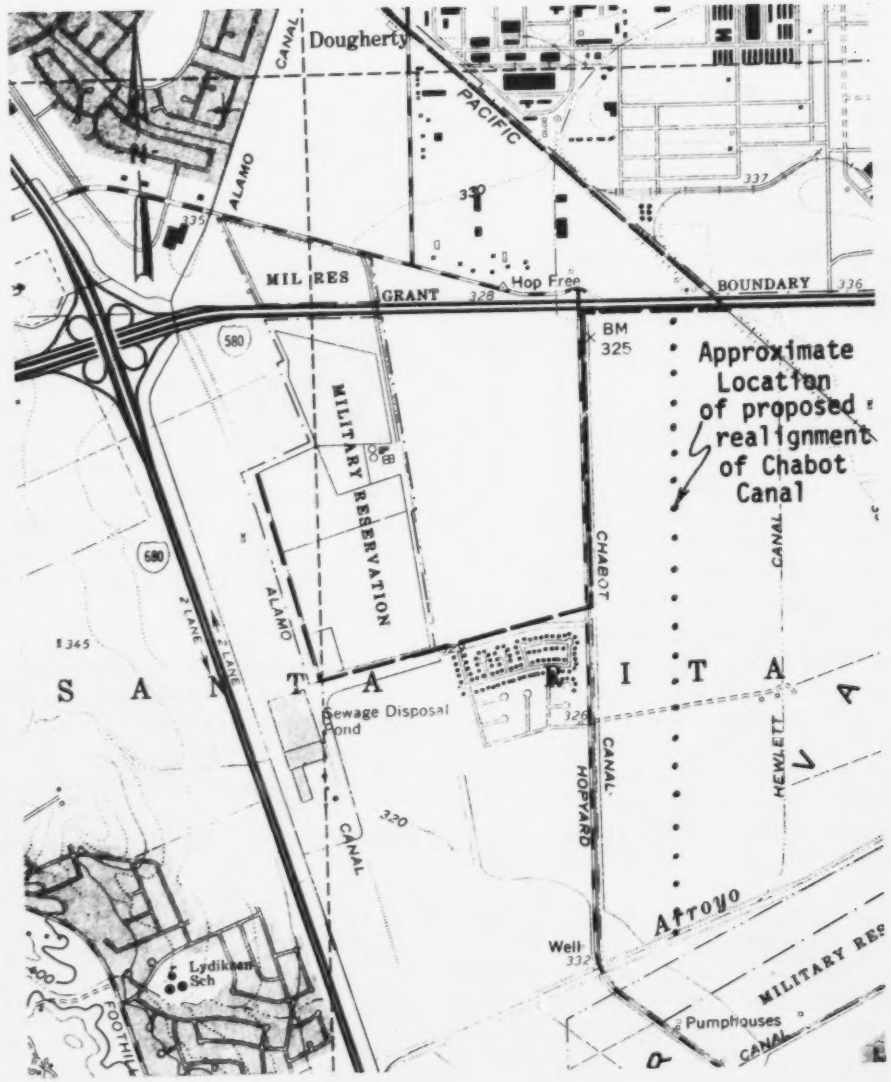


Figure 4-1 Proposed realignment of Chabot Canal, Pleasanton, California

measures would have to be implemented primarily to the east.

There must be careful coordination with the state and railroads to define a route through Niles Canyon with minimal impact on transportation and recreation. Construction activities in the Wildlife Refuge near the proposed outfall should be done as quietly as possible, and during hours when few visitors are present.

Niles Canyon-EBDA Connection

The discussion of Arroyo de la Laguna and Niles Canyon is equally applicable to this alternative. In addition, the route between Linda Drive and the Southern Pacific Railroad in Fremont should be moved to the southeast to correspond with the boundary line between Kraftile and adjacent residential property. This route would in no way curtail Kraftile's mining operations since they could not mine right up to the edge of the property in any case (Figure 2-2). There may also be a need to coordinate this routing with state plans to extend State Highway 84 through that same location.

AESTHETICS

In order to ameliorate impacts on visual quality associated with the alternatives, the construction crew should maintain a clean work site and avoid the accumulation of construction debris. Such cleanliness during construction and quick restoration of the route after construction are both of prime importance to visual quality. In addition, care should be taken in the final design and construction stages of the project to preserve the visual amenities of Arroyo de la Laguna and Niles Canyon.

TRAFFIC

Permits defining the specific mitigating measures needed to minimize traffic disruption would be issued by appropriate city, county, and state traffic engineers before construction could begin. In some cases, the impact may be so severe or in violation of the applicable law that the pipeline cannot be constructed.

General mitigation measures that could be employed along the alternative pipeline routes include:

- Limiting the construction period to off peak traffic hours, especially in the peak period traffic lanes.
- Closure of as few lanes as possible, particularly during peak period traffic hours.
- Night construction in non-residential areas and along busy streets and intersections.
- Traffic control procedures (detours or flagmen).
- Limiting the length of roadway affected at any one time.
- Limiting the construction during peak holiday traffic.
- Boring and jacking under critical traffic thoroughfares.

Suisun Bay Discharge

Permits to construct this proposed pipeline would be necessary from Caltrans, Contra Costa County, Alameda County and the cities of Walnut Creek, Concord, and Pleasanton. In each case, major crossings and impingement upon rights-of-way must be individually reviewed as they pertain to the appropriate law or ordinance. During the review, specific mitigation measures would be agreed upon. It appears likely that those crossing points shown in Table 2-4 with a level of service of D or E would require boring and jacking to prevent construction from disrupting traffic to near standstill conditions. The use of underpasses or more boring and jacking would be necessary to avoid route interference of any interstate freeways or BART. Without specific route plans, it is difficult to identify mitigation that may be required.

Niles Canyon-South Bay Discharge

Permits for this particular pipeline route would have to be issued by Caltrans, Alameda County, and the cities of Pleasanton, Fremont, and Newark. Each permit, as before, would identify the specific mitigation measures needed where the proposed pipeline would impair traffic. The most severe mitigation measures would probably be imposed for construction along State Highway 84 in Niles Canyon. These measures would have to ensure that traffic would not be blocked in the future if the pipeline were ever in need of repair after construction had been completed. This would entail in-depth discussions between Caltrans and the pipeline design engineers.

Mitigation would also be critical during rush hours for those portions of State Highway 84 in Newark and Fremont. This might necessitate limiting or ceasing operations during these periods or requiring night operations.

Niles Canyon-EBDA Connection

Mitigation measures for this particular proposed pipeline route would be specified in the permits from Caltrans, Alameda County, and the cities of Pleasanton, Fremont, and Union City. The mitigation measures discussed for the South Bay Discharge Pipeline up to Mission Boulevard are applicable to the EBDA Connection. The most stringent mitigation measures for the EBDA Connection would be necessary near the Sullivan Underpass and then along Niles Boulevard and Alvarado-Niles Road, especially the latter. Since it would be necessary to close at least one lane of Alvarado-Niles Road, closure should be done only during off peak traffic hours, if possible, and construction activities should be limited to one to two block increments. Boring and jacking may be necessary at the Decoto Road and Union City Boulevard intersections.

NOISE

Noise disruption can best be mitigated by the following construction practices:

- Equipping and maintaining all vehicle and equipment engines with mufflers.
- Use of extra, temporary engine mufflers in the vicinity of residential developments or other noise sensitive receptors (i.e., hospitals and schools).

- Maintaining construction activities between 8:00 a.m. and 5:00 p.m. during weekdays in residential areas.

AIR QUALITY

Mitigating measures that would reduce air quality impacts due to dust generation for the three alternatives include:

- Watering all exposed earth.
- Watering or covering exposed earth piles.
- Limiting the length of pipeline under construction at any one time.
- At those areas where the pipeline is to be constructed over unpaved roads, dust can be minimized by watering or oiling construction roads.
- Avoiding activity on extremely dry, windy days.

These measures should be especially adhered to in those areas where residences are near the construction site.

APPENDIX A

SECTION 5
UNAVOIDABLE ADVERSE IMPACTS

INTRODUCTION

This section summarizes those environmental effects created by the proposed project alternatives that could not be adequately mitigated. For purposes of discussion, it is assumed that all potential impacts that could be mitigated would be mitigated. To facilitate the comparison of each alternative, the following discussion has been organized by alternatives rather than by environmental discipline.

SUISUN BAY DISCHARGE

Geology

The pipeline would be susceptible to potential damage due to lateral displacement along the Concord and Pleasanton faults. Evidence of fault creep has been observed along portions of the Concord Fault in the general vicinity of the pipeline. Although no historic evidence of displacement has been observed along the Pleasanton Fault, it is considered potentially active by the state geologist. The pipeline could be designed to minimize damage from fault displacement but the hazard probably could not be entirely eliminated.

The consumption of mineral resources for pipeline fabrication and emplacement is unavoidable. Steel and concrete would be consumed in fabricating nearly 31 miles of 30-inch inside diameter pipe. Approximately 89,000 cubic yards of crushed rock or gravel would be consumed as pipe bedding material and as much as 430,000 cubic yards of sand would be required for trench backfill (assuming 100% imported fill). In addition, up to 533,000 cubic yards may have to be disposed.

Terrestrial Biology

Temporary disturbance to the marsh at the north end of the pipeline route and to the wildlife that lives there would be unavoidable. Noise and dust disturbance to the wildlife along the rest of the route would also be unavoidable during the working days.

Aquatic Biology

Loss of marine benthos along the outfall alignment during construction cannot be avoided. Decreased phytoplankton photosynthesis and abundance of fish would also be unavoidable. These impacts are short-

term and pre-construction conditions would be restored by natural processes within a few months.

Degradation of habitat and creation of a typical outfall benthic community around the diffuser are unavoidable impacts. They are permanent and highly localized.

Water Quality

Some short-term degradation of the water quality of local streams and Suisun Bay during construction would be unavoidable. However, the extent of this degradation can be greatly reduced through the application of appropriate mitigation measures.

Archeological and Historical Resources

No known archeological or historical resources would be affected by this alternative, though buried archeologic remains could be encountered during trenching activities. Three recorded archeologic sites may be within the vicinity of the pipeline route but these sites were not located during the field survey due to the presence of fill material and the lack of detailed site locations.

Land Use and Aesthetics

If the route heads north between Hopyard Road and Chabot Canal in Pleasanton, future development fronting on Hopyard Road would be forced back from the road in order to keep the pipeline easement clear and accessible. Some of the Southern Pacific corridor lands leased to others would be temporarily disrupted by construction activities. Construction activities would temporarily mar scenic views as well.

Transportation Systems

The most significant unavoidable adverse traffic impacts would occur at those locations where the pipeline crosses the major streets shown in Table 2-4 having a "D" or "E" level of service rating. Presumably these areas would be mitigated to the greatest degree possible, i.e., boring and jacking and off-peak traffic hour operations. Nevertheless, additional traffic congestion is anticipated.

Noise

Construction would impact noise sensitive receptors along the pipeline route in San Ramon Village, San Ramon, Danville, Alamo, Walnut Creek, Pleasant Hills, and Monte Del Diable. These noise levels would last for a couple of weeks at any one location.

Air Quality

Dust and exhaust emissions generated by construction activities would cause a temporary nuisance impact at residences near the pipeline route. Although, the impact could be minimized through the use of standard mitigating measures, it could not be entirely eliminated.

Utilities and Energy Consumption

Operation of the force main segment of the pipeline would consume approximately 6 million kilowatt-hours (Kwhr) of electricity per year. Energy would also be consumed in the fabrication and emplacement of the pipeline. Although the actual amount cannot be calculated, it is assumed these energy requirements would be proportional to the length of pipeline.

NILES CANYON-SOUTH BAY DISCHARGE

Geology

The pipeline would cross two active faults -- the Calaveras-Sunol and the Hayward faults. Tectonic creep has been observed in the vicinity of the pipeline crossing of these faults. Thus the pipeline would be susceptible to potential damage because of continued lateral displacement along these faults either in the form of creep or sudden movement related to an earthquake. Although the pipeline could be designed to minimize damage from fault displacement, the hazard probably could not be entirely eliminated.

In addition to the steel, concrete and miscellaneous mineral resources that would be consumed in the fabrication of nearly 25 miles of pipeline, sand and gravel or crushed rock would be required for pipe bedding material and engineered trench backfill. Approximately 74,000 cubic yards of gravel or crushed rock would be required for a 1-foot-thick pipe bedding in the bottom of the trench and up to 265,000 cubic yards of granular backfill material would be required in order to ensure proper compaction. The excavated earth would have to be disposed. Although there is a possibility that a portion of this material may be stockpiled for use by Caltrans in constructing a bike trail along State Highway 84 through Niles Canyon, no commitments have been made at this time.

Terrestrial Biology

Arroyo de la Laguna must be crossed by the pipeline at some point. This would probably necessitate the destruction of some riparian vegetation. Some trees in Niles Canyon are likely to suffer root damage or to be removed. This would reduce the aesthetic and wildlife habitat values of the area.

Some vegetation would be destroyed along most of the proposed alignment, resulting in decreased productivity and soil stability until vegetation recolonizes the disturbed corridor. Dust and noise would disturb wildlife in the region during working hours.

Aquatic Biology

Construction of an outfall into San Francisco Bay would result in the loss of marine benthos, decreased phytoplankton photosynthesis, and decreased abundance of fish in the vicinity of the construction activities. These impacts are short-term in nature and in general pre-construction conditions would be restored by natural processes within a few months. The operation of the outfall would result in permanent but highly localized changes in the benthic community around the diffuser.

Construction activities in Alameda Creek would result in temporary degradation of aquatic habitat and possible direct adverse effects on aquatic organisms, the degree depending on the success of mitigation measures employed to minimize downstream siltation. These mitigation measures would be contained in the California Department of Fish and Game Streambed Alteration Permit.

Water Quality

Construction of the pipeline and the South Bay outfall would result in some unavoidable degradation of local water quality. The extent and duration of

this degradation, however, can be lessened significantly through the use of mitigation measures.

Archeological and Historical Resources

Although no known archeological resources were identified within the zone of disturbance for pipeline construction, buried archeologic remains could be encountered during trenching operations along the pipeline route. The proposed pipeline route would pass through the southern edge of Vallejo Mills Historic Park. Special care would be required to avoid disturbance to an old stone aqueduct that parallels Niles Canyon Road on the same side as the proposed pipeline route.

Land Use and Aesthetics

During construction of the pipeline, recreational activities along Niles Canyon and wildlife observation at the proposed National Wildlife Refuge would be disrupted.

Transportation Systems

State Highway 84 would be unavoidably impacted at those points where the topography restricts right-of-way and the pipeline would be forced into the roadway. In addition, assuming that the pipeline would closely parallel State Highway 84 within Newark and near the Dumbarton Bridge, construction activities would severely impair traffic movement during rush hour periods unless extensive mitigation is undertaken. There is also a potential that pipeline construction at the western end of the route would conflict with proposed reconstruction of Dumbarton Bridge.

Noise

Noise sensitive receptors along this alternative that would be disturbed by pipeline construction are residential areas of Sunol, Fremont, and Newark. Construction noise impacts would last for only a couple of weeks in each area.

Air Quality

Unavoidable air quality impacts are restricted to short-term localized effects of construction activities, such as dust and exhaust emissions.

Utilities and Energy Consumption

Operation of this pipeline would consume approximately 1 million kwhrs of electricity annually. Energy consumed in the fabrication and emplacement of the pipeline would be proportionate to the pipeline length.

NILES CANYON-EBDA CONNECTION

Geology

The impacts or hazards associated with this alternative are nearly identical to those discussed for the Niles Canyon-South Bay Discharge alternative. There is a potential for pipeline damage due to fault displacement at the points the pipeline would cross the Calaveras-Sunol and Hayward faults. Mineral resources would be consumed for pipeline fabrication and emplacement. Approximately 85,000 cubic yards of gravel or crushed rock would be consumed for pipe bedding, while up to 305,000 cubic yards of sand and silt would be consumed as trench backfill.

Terrestrial Biology

The unavoidable impacts of this alternative are the same as for the Niles Canyon-South Bay Discharge alternative.

Aquatic Biology

Some adverse impacts on aquatic organisms and aquatic habitat would undoubtedly result from construction activities in Alameda Creek at the proposed pipeline crossings. The magnitude of these impacts would be dependent on how successfully the conditions set forth by the California Department of Fish and Game in their Streambed Alteration Permit are met.

Water Quality

A certain amount of water quality degradation is inevitable whenever construction occurs in streambeds, as is the case for this alternative with Arroyo de la Laguna and Alameda Creek. However, the magnitude of these impacts can be significantly reduced through proper mitigation.

Archeological and Historical Resources

No known archeological resources were identified within the anticipated zone of disturbance, but buried archeologic remains could be encountered during trenching operations at any point along the pipeline route. As mentioned in the discussion of the Niles Canyon-South Bay Discharge alternative, disruption of Vallejo Mills Historic Park property would result from pipeline construction.

Land Use and Aesthetics

During construction, recreational activities along Niles Canyon would be disrupted.

Transportation Systems

The unavoidable adverse impacts through Niles Canyon that would be associated with the South Bay Discharge alternative would also be present in this alternative. In addition, a narrow right-of-way along Alvarado-Niles Road and present traffic congestion on Niles Boulevard would make traffic conditions in these areas difficult to mitigate during construction activities.

Noise

Sunol, Fremont, and Union City would experience a noise impact during construction of the pipeline. Noise sensitive receptors along the pipeline route would be disturbed for a couple of weeks.

Air Quality

Dust and exhaust emissions would be generated during construction activities, causing a temporary nuisance to areas in the immediate vicinity of pipeline construction.

Utilities and Energy Consumption

Approximately 1 million kwhrs of electricity would be consumed annually for the operation of this pipeline. In addition, energy would be consumed in the fabrication and emplacement of the pipeline, the amount being proportional to the length of pipeline.

APPENDIX B

ENGINEERING EVALUATION OF ADDITIONAL ALTERNATIVES

SUMMARY AND CONCLUSIONS *

INTRODUCTION

The facility plan submitted in July 1976 for the LAVWMA project recommended an export pump station with a pipeline over Boehmer Summit and a connection to the East Bay Dischargers Authority Interceptor as the most cost effective means of disposal of the wastewater from the Livermore-Amador Valley.

A bond issue to finance the local share of the recommended project was defeated in November 1976. In December 1976 CH2M HILL was asked by LAVWMA to review the estimated costs of the five most viable alternatives developed in the previous study. During the review of costs and the meetings in January 1977 in which the results were presented, it became apparent that:

1. There is a strong sentiment among residents that more effluent should be reused in the valley rather than exported.
2. Demineralization of the water supply, as well as wastewater, should be investigated as a means of controlling salt buildup.
3. An export route north to Suisun Bay should be investigated.

As a consequence, the LAVWMA Board authorized CH2M HILL to investigate the foregoing and, in addition, to investigate in more detail the feasibility of an export pipeline down Niles Canyon with discharge either to San Francisco Bay or to the EBDA Interceptor.

Because of the short time remaining to qualify for grant funds, it was required that the report be completed by 24 March 1977. To complete the investigation within this limited time, a number of teams worked simultaneously on the various elements.

REUSE ANALYSIS

It was apparent early in the investigation that salt concentration in the ground water would be a limiting factor for reuse. It was also determined that demineralization of ground water would be more effective than demineralization of either wastewater or South Bay Aqueduct water as a means of controlling salt buildup. The reuse plans developed for evaluation were based on these findings.

Alternative reuse plans considered are briefly described as follows:

X: Total export of wastewater with no demineralization.

O: Nominal reuse of wastewater with export of balance and no demineralization.

E: Nominal reuse of wastewater with demineralization of ground water for approximately one-half the water supply.

I: Demineralization of ground water for approximately 90 percent of water supply and reuse of approximately 45 percent of wastewater applied to public use areas at normal irrigation rates.

H: Same as I except wastewater applied to a greenbelt area on both sides of I-580 at high rates.

R: Demineralization of ground water for approximately 90 percent of water supply with total reuse of wastewater.

In all cases, ample suitable land is available for the reuse quantities considered. For each reuse alternative, a subalternative plan, identified with postscript S, was developed to include storage for wastewater during wet months to reduce export capacity.

Alternative export plans considered are briefly described as follows:

1B: Export over Boehmer Summit, the previously recommended plan.

1AD2: Export through Niles Canyon with discharge to San Francisco Bay north of Dumbarton Bridge of secondary treated wastewater.

1AD3: Same as 1AD2 except with tertiary treatment.

1AE: Export through Niles Canyon with discharge to EBDA Interceptor at the Alvarado Pump Station.

1S: Export through San Ramon Valley with discharge to Suisun Bay of secondary treated wastewater.

1SN: Same as 1S except wastewater is nitrified and denitrified.

An analysis of ground water reveals the following:

1. The basin is essentially closed with no natural outflow of ground water. At the present time more salt is being added to the ground-water body than is being removed. If this is allowed to continue indefinitely, the total dissolved solid concentration of the ground water will increase to unacceptable levels.
2. The present average concentration of salt (TDS) is 450 mg/l.

*From CH2M-Hill, March 1977, Reclamation-Reuse and Export Alternatives Evaluation, Report for Livermore-Amador Valley Water Management Agency.

APPENDIX B

3. If pumping and recharge are controlled to maintain a constant volume of water in the basin, the TDS concentration will respond to the reuse alternatives as follows:

   - Even with total export of wastewater and with no demineralization (Alternative X), the TDS concentration will increase to approximately 550 mg/l and will still be increasing in the year 2000.
   - With nominal reuse of wastewater and no demineralization (Alternative O), the TDS concentration will increase to approximately 625 mg/l by the year 2000 and will still be increasing.
   - To maintain the TDS concentration at its present level with total export of wastewater will require demineralization of ground water to supply approximately 50 percent of the water supply (Alternative E).
   - If demineralized ground water is used for approximately 90 percent of the water supply, the TDS concentration can be maintained with reuse of approximately 45 percent of the wastewater (Alternatives I and H).
   - If demineralized wastewater is used for 90 percent of the water supply and all wastewater is reused in the valley, the TDS concentration will initially increase to over 550 mg/l but will be decreasing by the year 2000 (Alternative R)

In all of the foregoing cases, it is assumed that:

1. Safe yield pumping of the ground-water basin is maintained by recharge with untreated South Bay Aqueduct water.
2. All brine from the demineralization of ground water is exported.
3. Peak water supply demands are met with South Bay Aqueduct water treated in the existing Zone 7 plants.

DEMINERALIZATION

A review of the state of technology on demineralization revealed the following:

- The most suitable method of demineralization of brackish water is reverse osmosis. It is better than distillation, freezing, ion exchange, or electrodialysis for the waters to be treated here.
- Of the three waters which could be demineralized, ground water, wastewater, and South Bay Aqueduct water, the easiest to treat and the one producing the greatest salt removal per unit of cost is the ground water.
- The most cost-effective method of removing the brine is to export it from the basin. Evaporation would require extensive acreage of sealed ponds which would cost more than export.

EXPORT ALTERNATIVES

Field reconnaissance surveys were made of all export routes, in most cases with representatives of the agencies from which permits or right-of-way would need to be obtained.

The following briefly describes the conclusions regarding the feasibility of the routes evaluated.

NILES CANYON

The concrete conduit belonging to the San Francisco Water Department is not available. The installation of a pipeline in the highway right-of-way is possible but difficult and would entail strict requirements for working hours and traffic control.

The route from the mouth of Niles Canyon to San Francisco Bay includes a significant length of installation in urban streets with additional traffic and utility problems.

There is a question regarding the degree of treatment which may be required for discharge into South San Francisco Bay. The Regional Water Quality Control Board has adopted a resolution of intent which includes two sets of likely discharge requirements. One would require secondary treatment and the other would require nitrification and filtration in addition to secondary treatment. The Regional Board has indicated that at the present time they are not sure which might be adopted.

The installation of the diffuser in the bay would be difficult and expensive. It would require special investigations of both the bottom of the bay and the effect on water quality. It is extremely doubtful that the necessary studies could be completed in time to meet the 30 September 1977 deadline for grant fund commitment.

The route from the mouth of Niles Canyon to the point of connection with the EBDA Interceptor is feasible but again involves considerable construction in urban streets with the attendant problems.

If connection is made to the EBDA Interceptor at the Alvarado Pump Station, a new agreement must be executed between LAVWMA and EBDA. The additional

length of EBDA Interceptor includes two pump stations and 7.3 miles of additional pipeline, a share of the cost of which would be allocated to LAVWMA. Furthermore, LAVWMA would be required to pay the cost of redesign of this section of the EBDA interceptor and would need to have funds available to pay their share of costs of the first section of that pipeline which has already been bid.

BOEHMER SUMMIT

A preliminary design for the construction of a pipeline over this route was prepared by Carollo Engineers. Although there are some difficult construction problems and it requires a high pumping head, it is feasible and could probably be implemented with the least amount of problems as far as permits and approvals are concerned.

SUISUN BAY

Although this route is longer than any of the others, the installation of the pipe in the Southern Pacific Railroad right-of-way would minimize construction problems. It also has a pumping head requirement which is less than half that for the Boehmer Summit route. Southern Pacific has indicated they would ask $3.5 million for a right-of-way for the pipeline. Contact was made with Central Contra Costa County Sanitary District regarding the possibility of conveying LAVWMA wastewater through their outfall to Suisun Bay. Although the initial reaction was negative, this possibility could be pursued. Discharge requirements for Suisun Bay presently can be met with secondary treatment, but there is a possibility that nitrification and denitrification may be required at some future date.

COMBINATION PLANS EVALUATION

The 6 export alternatives combined with 11 reuse alternatives result in a total of 66 combinations. Cost estimates were prepared of capital and operation and maintenance costs for all 66 combinations. Annual costs were developed for each combination for both 1980 and 1990 to indicate the impact of escalation of costs of energy, labor, and materials.

A screening of the 66 combinations reduced to 12 the number to be further evaluated. Significant concerns related to the proposed project were tabulated, and each of the 12 alternatives was ranked for each concern. This procedure resulted in the ranking indicated in Table SC-1 at the end of the Summary and Conclusions. This table also indicates cost figures for the 12 selected alternatives.

CONCLUSIONS

1. Reuse is feasible only with demineralization and export of salt if TDS of ground water is to be kept below 500 mg/l.

2. If reuse is practiced without demineralization, TDS concentrations will rise from the present average TDS of 450 mg/l to a level in excess of 1,000 mg/l depending on the amount of reuse.

3. All alternatives considered require an export pipeline. Even with total reuse of wastewater within the basin, the brine must be exported.

4. Export of most of the wastewater over Boehmer Summit with limited reuse is still most cost effective, easiest to implement, and has highest percentage of grant eligible costs.

5. The Suisun Bay route is attractive but has higher cost than Boehmer Summit. The Southern Pacific right-of-way cost and buy-in to the CCCSD outfall, if available, would not be grant eligible.

6. Different reuse alternatives are most effective in meeting different objectives:

   - Alternative O is the lowest cost project. It includes limited reuse, no demineralization, and increases ground-water TDS.
   - Alternative E is the lowest cost reuse project which preserves the quality of the ground water. It includes limited reuse and demineralizes approximately 50 percent of the water supply.
   - Alternative H is the project with maximum reuse and preservation of ground-water quality. It includes reuse of approximately 45 percent of the wastewater and demineralization of the water supply.
   - Alternative RS involves 100-percent reuse of the wastewater and demineralization of approximately 90 percent of the water supply. It results in some increase of ground-water TDS.

7. The benefits of wastewater reuse with demineralization of ground water for water supply would be:

   a. An improved quality of water supply.

   b. A reduction of the quantity of water imported via the South Bay Aqueduct.

   c. The establishment of additional irrigated acreage in a greenbelt area on both sides of I-580 and in some additional public use areas.

APPENDIX B

Table SC-1
Alternatives, Costs, and Overall Ranking

Export Alternative	Item	O (No Demin Nom Reuse) 1980	O (No Demin Nom Reuse) 1990	E (Min Demin For Salt Bal) 1980	E (Min Demin For Salt Bal) 1990	H (Max Demin High-Rate Irrig) 1980	H (Max Demin High-Rate Irrig) 1990	RS (Max Demin & Max Reuse) 1980	RS (Max Demin & Max Reuse) 1990
1B	Tot. Cap.	38,009	38,009	46,068	79,232	52,619	136,916	61,269	145,566
(Boehmer	Ann. Cap.	3,041	3,041	3,685	6,338	4,210	10,953	4,902	11,645
Summit-	Ann. O&M	354	737	975	5,975	1,267	9,315	1,701	9,625
EBDA	Ann. Tot.	3,395	3,778	4,660	12,313	5,477	20,268	6,603	21,270
Interceptor)	Ann. Crop Rev	28	56	28	56	438	876	978	1,956
	Ann. Net	3,367	3,722	4,632	12,257	5,039	19,392	5,625	19,314
	RANK*		(1)		(4)		(6)		(7)
1AE	Tot. Cap.	50,241	50,241	57,931	91,095	64,482	148,779	66,528	150,825
(Niles	Ann. Cap.	4,019	4,019	4,634	7,288	5,159	11,902	5,322	12,066
Canyon-	Ann. O&M	181	384	790	5,313	1,094	8,929	1,699	9,432
EBDA	Ann. Tot.	4,210	4,403	5,424	12,601	6,253	20,831	7,021	21,498
Interceptor)	Ann. Crop Rev	28	56	28	56	438	876	978	1,956
	Ann. Net	4,182	4,347	5,396	12,545	5,815	19,955	6,043	19,542
	RANK*		(3)		(5)		(8)		(9)
1S	Tot. Cap.	43,763	43,763	50,347	83,511	56,888	141,185	64,513	148,810
(Suisun	Ann. Cap.	3,501	3,501	4,028	6,681	4,551	11,295	5,161	11,905
Bay-	Ann. O&M	200	418	808	5,440	1,105	8,892	1,657	9,333
Secondary	Ann. Tot.	3,701	3,919	4,836	12,121	5,656	20,187	6,818	21,238
Treatment)	Ann. Crop Rev	28	56	28	56	438	876	978	1,956
	Ann. Net	3,673	3,863	4,808	12,065	5,218	19,311	5,840	19,282
	RANK*		(2)		(5)		(8)		(9)

*Ranking is in order of total value of weighted evaluation factors developed in Table 4-2.

APPENDIX C
ADOPTED MITIGATION RESOLUTIONS

INTRODUCTION

This appendix contains final responses to LAVWMA requests for mitigation measures. Alameda County's response has been to cite a number of resolutions and ordinances that they maintain will provide, within the unincorporated area, substantial mitigation of the secondary impacts discussed in the LAVWMA EIS. Contra Costa County has proposed no measures to mitigate impacts within the service area.

Also contained in this appendix are resolutions adopted by the cities of Livermore and Pleasanton and by the Valley Community Services District. EPA has determined that these mitigation measure resolutions (which appeared in draft form in the FEIS) are adequate to offset the secondary impacts from development occurring in the portion of the service area governed by these agencies. EPA commends these agencies for the effort and foresight involved in developing and adopting these growth-management measures.

APPENDIX C

Rec'd 9 Aug 77 WFI

OFFICE OF THE
COUNTY ADMINISTRATOR

July 5, 1977

Mr. Robert F. Bradford
Project Manager
Livermore-Amador Valley
Water Management Agency
Hotel Claremont
Berkeley, CA 94705

Dear Mr. Bradford:

In response to your earlier request, our Planning Director and staff have reviewed the mitigation measures concerning the Wastewater Management project.

Mr. William Fraley's attached letter and the addendums to the letter provide information on the County's position.

If there should be further comments from our Public Works Agency, these will be forwarded to you at a later date.

Very truly yours,

Loren W. Enoch

LOREN W. ENOCH
COUNTY ADMINISTRATOR

LWE:ih
Enclosures

P.S. Before mailing, comments were received from the Acting Director of Public Works. This memorandum is also enclosed.

1221 OAK STREET · SUITE 555 · OAKLAND, CALIFORNIA 94612 (415) 874-6253

ALAMEDA COUNTY PLANNING DEPARTMENT

399 Elmhurst Street, Hayward, California 94544 (415) 881-6401

June 29, 1977

Loren Enoch
County Administrator
Administration Building
1221 Oak Street
Oakland, CA

Dear Loren:

This is a response to the Environmental Protection Agency's comments on our November 25, 1975, response to measures which Livermore Amador-Valley Water Management Agency proposed could be undertaken by the County to mitigate secondary impacts associated with the LAVWMA wastewater management project. The LAVWMA Board through its project manager, Mr. Robert F. Bradford, requested this response by lett to you dated June 9, 1977.

EPA's primary concern is that "...mitigation measures be in the form of commitments such as resolutions or ordinances." The Board of Supervisors has adopted a number of resolutions and ordinances that will provide, in the unincorporated area, substantial mitigation of the secondary impacts discussed in the LAVWMA EIS. These documents, copies of which are enclosedconcern the location and timing of new development, the manner in which it is carried out, and the management of non-urban lands. Following is a listing of these documents and a general description of the mitigation each provides.

I. The Alameda County General Plan. Contains policies for centering new developent in existing urban nuclei (except where a new community is justified) and staged development to accommodate new growth; maintaining a balance between residential development and employment; limiting growth to protect physical and social identities of local communities; providing a variety of residential densities to accommodate a wide variety of housing needs; developing compact commercial areas and industrial areas convenient to major transportation routes; providing for public mass transit to serve all sections of the County; [illegible] preservation of agricultural and other open space lands.

The Livermore-Amador Valley portion of the [illegible]al Plan currently is under review by the Board of Supervisors. The Planning Commission has recommended the addition of a number of new policies that reinforce present policies emphasizing city-centered development, reducing reliance on the automobile and preservation of agricultural lands. The Planning Commission also has recommended leaving unamended the proposal of the existing plan for a new community north of Livermore. The Board will consider this matter next on July 28, 1977. We cannot predict when final action will be taken or the final nature of policies and land use proposals that may be adopted..

2. Board of Supervisors Resolution No. 157830--Policy Requirements for Special Plan for Las Positas Area. This document, which was adopted at the time the General Plan was amended to show a new community north of Livermore, states several social and environmental criteria to be met in the specific plan for the new community.

   The LAVWMA EIS expresses special concern for the secondary impacts of its project on air quality. These impacts, according to the EIS, would occur as a result of new development made possible by the LAVWMA project and associated increases in vehicle miles traveled. It can not be determined at this point whether the new community in any way will be a result of the LAVWMA project or whether it will occur at all; however, provisions 4 and 5 of this document constitute measures that have been adopted to mitigate these impacts. The means by which the measures are carried out would be determined in the preparation of the specific plan and could include a number of the strategies discussed by EPA as well as others.

3. Open Space Element of the General Plan. Sets policy for the preservation of extensive land areas in the Livermore-Amador Valley for agricultural and other open space uses. (The Conservation, Housing, Seismic Safety, Safety and Noise Elements of the General Plan also contain policies fostering environmental protection. Documentation will be supplied if requested.)

4. Alameda County Zoning Ordinance. Restricts the use of most unincorporated land in the Livermore-Amador Valley, except for the community of Dublin, to agricultural uses with division of land into less than 100 acres prohibited. (Documentation, zoning maps, etc. can be supplied on request.)

5. Board of Supervisors Resolution No. 148744, Rural Residential Policy. Used in conjunction with the Zoning Ordinance to evaluate the timeliness of residential growth in areas beyond the cities. Restricts such uses to areas planned residential; requires concurrent provision of necessary residential services; provides protection of water resources.

6. Alameda County Agricultural Preserves--Objectives, Uniform Rules and Procedures. (Current version adopted by the Board of Supervisors December 2, 1976). Provides for extensive use of the Land Conservation Act of 1965 to preserve agricultural lands in the unincorporated areas of Alameda County. Approximately 170,000 acres of land have been restricted to agricultural use under this program and the Board welcomes all owners of qualified land not presently restricted to enter the program. The Board has cancelled none of its preserve contracts. 7650 acres of the land in the program is prime, 5450 acres are classified by the State as urban and 2200 as non-urban.

7. Board of Supervisors Resolution No. 152359, Guidelines for Implementing California Environmental Quality Act. States the County's objectives to, among other things, maintain a high-quality environment, to take all action necessary to provide the people of the County with clean air and water and to prevent the elimination of fish or wildlife species due to man's activities. This resolution stands as a major mitigation measure. All development projects likely to have a significant effect on the environment must be evaluated and acted upon in accordance with these guidelines including any development project that may be proposed in the unincorporated area as an indirect result of the LAVWMA project.

8. Ordinance No. 74-66 - Building Regulations. Establishes requirements for soils and geologic investigations and conditions to be met for building on sloping ground, including the control of erosion and drainage. Establishes requirements for individual sewage treatment systems. (Similar provisions for grading, drainage and erosion control are contained in the Alameda County Subdivison Ordinance. Documentation supplied upon request.)

9. Specific Plan for Areas of Environmental Significance. Flood Fringe and Flood Way Zoning Districts. Establish policy and law for protection of riparian areas and scenic resources of the unincorporated area; prevent the location of uses in areas subject to flooding in accordance with criteria of the Federal Flood Insurance Program.

The ordinances and policies described above, individually and through their inter-relationships provide adequately for avoiding or mitigating adverse effects on the environment of any development induced in the unincorporated area by the LAVWMA project.

Please let me know if further assistance is needed in regard to this matter.

Very truly yours,

William H. Fraley
Planning Director

WHF:cb

Enclosure

APPENDIX C

OFFICE OF THE
CITY ATTORNEY
LIVERMORE, CALIFORNIA

GARY B. REINERS
City Attorney

2250 First Street
Livermore, California 94550
(415) 447-2100

August 24, 1977

Mr. William Helphingstine
Environmental Protection Agency
100 California Street
San Francisco, CA

Dear Bill:

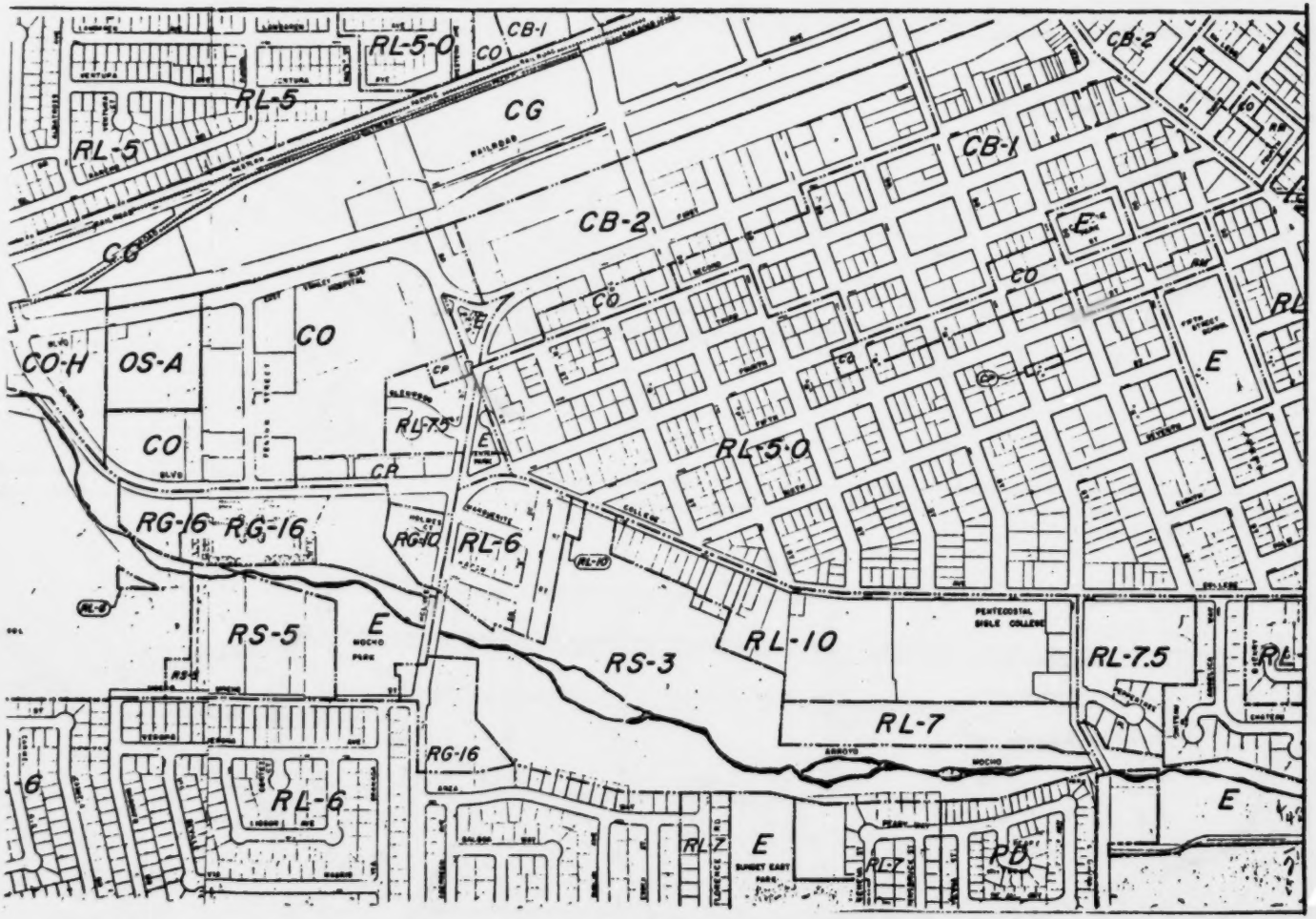
Enclosed is the certified copy of the Resolution unanimously passed by the Livermore City Council at its August 15 meeting.

You requested information concerning zoning near to proposed public transportation areas. At the present time, the Planning Commission is formulating policies for the development of the Central Area of the City of Livermore. In conjunction with this study, Grunwald, Crawford and Associates prepared a Central Area Development Plan. This plan proposes urban-medium and high density areas along the proposed BART lines. Transition to higher density has already begun to occur in several locations along this proposed route. Two maps which show the proposed area are enclosed. Also, I have sent a copy of the present zoning in the same area.

Sincerely,

GARY B. REINERS
City Attorney

clh
Enclosure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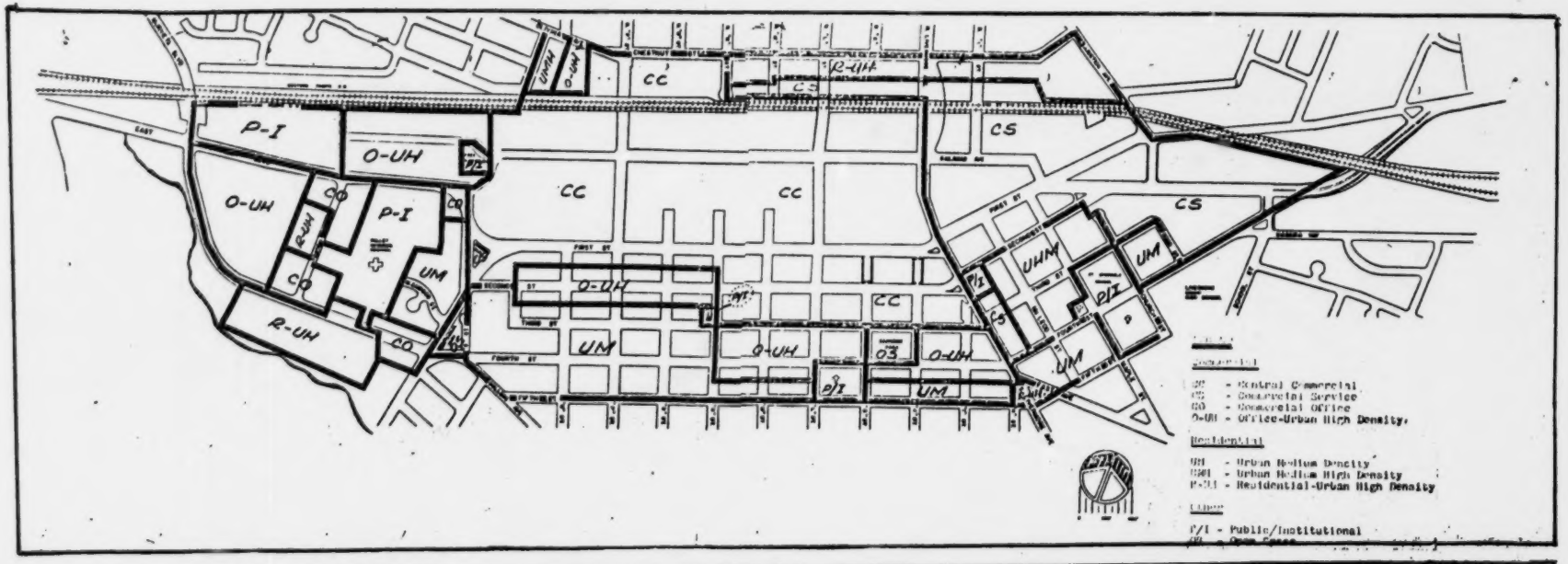
APPENDIX C



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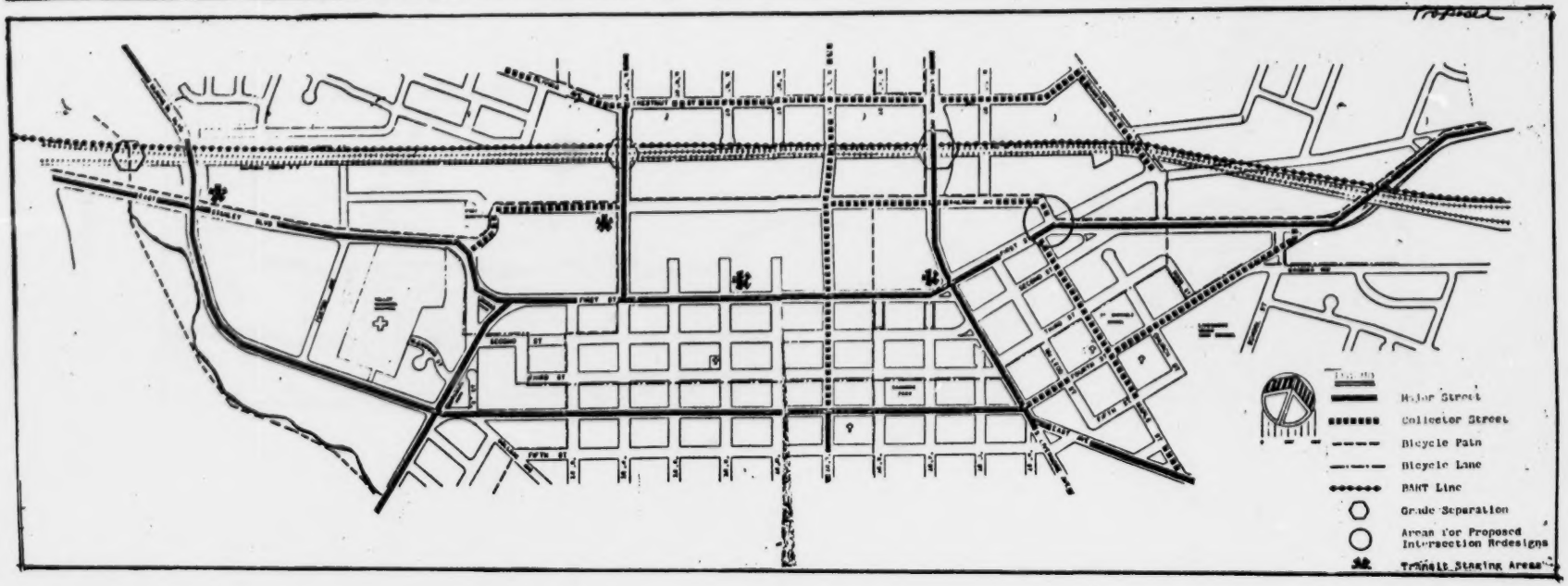
O-UH
CC
CS
R-UH
UM
UHM
CO
P/I
Commercial
CC - Central Commercial
CS - Commercial Service
CO - Commercial Office
O-UH - Office-Urban High Density
Residential
UM - Urban Medium Density
UHM - Urban Medium High Density
R-UH - Residential-Urban High Density
Other
P/I - Public/Institutional



Major Street
Collector Street
Bicycle Path
Bicycle Lane
BART Line
Grade Separation
Areas for Proposed Intersection Redesigns
Transit Staging Areas

IN THE CITY COUNCIL OF THE CITY OF LIVERMORE

STATE OF CALIFORNIA

RESOLUTION NO. 180-77

A RESOLUTION RELATING TO THE LAVWMA EXPORT PIPELINE PROJECT AND THE TRANSLATION OF MITIGATION PROPOSALS TO MITIGATION COMMITMENTS.

WHEREAS, the City of Livermore is a member of the Livermore Amador Valley Water Management Agency (LAVWMA), a Joint Exercise of Powers Agency; and

WHEREAS, LAVWMA is undertaking a project which will export treated effluent from the Livermore Valley; and

WHEREAS, the Livermore-Amador Valley suffers from some of the worst air quality in the Bay Region which has created a significant health hazard and negative economic impacts; and

WHEREAS, the construction of the LAVWMA export pipeline will, at least to a partial extent, increase the potential facility for further residential growth, residential development being the largest contributor to the Livermore-Amador Valley's air quality problem; and

WHEREAS, the Environmental Protection Agency (EPA) has proposed a table of Suggested Mitigation Measures for Secondary Environmental Impacts as part of their Environmental Impact Statement; and

WHEREAS, the City of Livermore prepared Mitigation Measure proposals and transmitted them to LAVWMA by letter dated February 10, 1976, which were subsequently transmitted to the EPA to be analyzed by that Agency; and

WHEREAS, the EPA by letter of May 12, 1976, requested LAVWMA agencies to undertake the process to translate the mitigation proposals into mitigation commitments; and

WHEREAS, Table 9-1 entitled "Authority for Mitigation of Secondary Impacts" is attached and made a part hereof, consisting of pages 9-10 through 19-22 and which contains column entitled "City of Livermore Response to the Measures it can Effect", and the mitigation measures contained in said Table consist of categories designated "A through I"; and

WHEREAS, the City of Livermore is willing to continue participation in and cooperation with the Association of Bay Area Governments (ABAG) in the development of an adequate air quality maintenance plan and to cooperate in the implementation of mitigation measures adopted in the plan consistent with the resources and goals of this City.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Livermore that it is their intention to implement the mitigation measures as listed in the aforesaid attached Table 9-1 in the manner as outlined below by letter and number designation corresponding to said table:

A-1 Under the State Law, subdivisions must conform to the General Plan. A recently adopted General Plan shows the known faults, and building will be controlled in the hazard zones.

A-2 An existing grading ordinance and the General Plan control building in hazardous areas and geological studies are required.

A-3 An existing grading ordinance provides control.

A-4 The General Plan of the City in III-C-2-c-(4) proposes to maintain as much existing class I and II soil as possible through the use of the Williamson Act and open-space zoning. A copy of the General Plan policy is attached.

By Resolution 48-75, the City has also established procedures for the formation of Agricultural Preserves pursuant to the Land Conservation Act of 1965.

B-1 The recently adopted General Plan designates the known historical/archaeological sites. Also the City has a Heritage Site Ordinance.

B-2 Same as B-1 above.

B-3 Use Police powers and surveillance.

C-1 The City has adopted ordinances to charge park fees and/or require dedication of park land for open space. The City levies a 19¢ Park Tax. The City and LARPD have a cooperative agreement for the acquisition and development of parks.

C-2 Same as C-1 above.

D-1 Same as C-1 above. The General Plan also provides for open space and parks.

APPENDIX C

D-2 Same as C-1 above. The General Plan provides for low densities in the uplands.

E-1 The City has adopted an open space element of the General Plan based on the topographic and soils resources of the Valley. The City also encourages the use of the Williamson Act to protect outlying lands from development encroachment.

E-2 The existing zoning ordinance provides an RS (Suburban Residential) zoning which allows clustering and a variety of housing types and rewards overall low density. The City will undertake future studies of higher density planning proposals such as heavier reliance on cluster zoning, and multiple or attached housing.

E-3 Same as E-1 above.

E-1 The City has actively pressed for continued and expanded BART bus service in the Valley and will continue to use any influence at its disposal to assure continued and expanded service.

F-2 Out of City's jurisdiction.

F-3 Out of City's jurisdiction.

F-4 Not a viable plan in Livermore at this time. Will support the plan when it is justified.

F-5 Such facilities are anticipated in the General Plan. The City has applied, through Alameda-Contra Costa Transit District, for $760,000 in UMTA funds for an 18 month pilot project providing an intra-city bus service. The City Council has approved a City share of $150,000 on the project and it is expected that the State will participate with Transportation Development Act funds.

F-6 Such a facility is under construction at this time. Additional facilities will be considered in future budgets based on the then current needs.

F-7 Bus stops have been provided out of the traveled lanes as requested by BART (AC Transit).

F-8 The City has worked with BART to obtain the most advantageous bus schedules and routes. The City will continue its interest and communication with BART.

F-9 Out of City's jurisdiction.

F-10 Out of City's jurisdiction.

F-11 The City will continue to encourage.

F-12 The City will continue to encourage.

F-13 Out of City's jurisdiction.

F-14 Out of City's jurisdiction.

F-15 Out of City's jurisdiction.

F-16 Out of City's jurisdiction.

F-17/18 As of August 1, 1977, a study has been undertaken for the purpose of determining the feasibility of acquiring for the City the only major parking lot in the central city. It is anticipated that such issues as the possible imposition of rates (and thus a preference for car pool parkers) or reserved parking for car pools will be considered. In addition, the City has received funding from MTC for a parking facility at the site of the future BART extension terminus.

F-19 The Central Business District Plan which is in the process of approval includes auto free zones and pedestrian malls in a portion of the vacant properties being planned for commercial development. They will be implemented along with the site plan approvals.

F-20 The plan is not favored in most instances because it results in increased driving and resulting air pollution. The Central Business District Plan provides for the downgrading of certain streets to be used as malls and parking rather than through traffic.

F-21 The City has adopted a bikeway element in the General Plan and has an active program to implement it. Funds are regularly budgeted for the program.

F-22 The existing zoning ordinance provides for such accommodations in the off-street parking section.

F-23 The existing trailway element of the General Plan provides for pathways. Such requirements are considered in the subdivision review process.

G-1 The City's recently adopted General Plan allocates, in the short-run, remaining sewage treatment capacity to commercial/industrial development in the amount of 90% with 10% for low/moderate income housing. Long range allocation of treatment capacity is not less than 50% of capacity shall be for commercial/industrial.

G-2 The City has recently formed a Community Development Department for that purpose.

G-3 The plan is considered too counter-productive and would reduce the potential for local employment.

G-4 The existing RS (Suburban Residential) zoning provides for clustering while maintaining overall lower densities and a rural atmosphere. The City will undertake future studies on higher density planning proposals such as heavier reliance on cluster zoning, and multiple or attached housing.

G-5 The General Plan includes a Central Business District Plan which anticipates the community's principal commercial developments will be located in that area. considerable progress has been made in development in the central area.

G-6 The City has the ordinance already.

G-7 The recently adopted General Plan sets forth such policies to limit urban sprawl on Page 98, a copy of which is attached hereto and incorporated herein by reference.

G-8 The City encourages the use of the Williamson Act.

By Resolution 48-75, the City has also established procedures for the formation of Agricultural Preserves pursuant to the Land Conservation Act of 1965.

G-9 The new General Plan has changed areas from urban to agriculture as a result of overall population reductions and because of soils and open space considerations.

G-10 Not applicable.

G-11 The City controls such extensions through the budget process. Any future extensions will have to conform with the objectives of the General Plan.

G-12 Not applicable.

G-13 The General Plan and City policy is to require infilling.

G-14 By every legal means available, the City has actively opposed efforts to establish subdivisions remote from existing urban areas but within our historical planning boundaries.

G-15 It would not appear financially feasible to establish green areas around established centers where the property is already developed. Where open space is available, it may be practical to acquire such land with Park Fee monies. The City will investigate the potential.

G-16 The City has an active program for such purchases with funds from Park Fees and the Park Tax.

G-17 The existing Zoning Ordinance has flood plain zoning.

G-18 The City has an air quality element in the General Plan. The City has an Air Quality Committee that has related development to air quality. The initial study has been updated recently. The City plans to continue to keep abreast of the relationship of development and air quality.

G-19 Completed.

G-20 Will be accomplished through the Air Quality Committee.

G-21 Not in our jurisdiction.

G-22 Not justified at present.

G-23 Is not considered to be practical. May force travel to a more convenient and distant shopping area affecting air quality.

APPENDIX C

H-1 Not in City control.

H-2 Not in City control.

H-3 Not in City control.

H-4 Not recommended. May force travel to a more convenient and remote shopping area.

H-5 Same as H-4.

H-6 Not recommended.

H-7 Not in City control.

H-8 Not in City control.

H-9 Not in City control.

H-10 Not in City control.

I-1 Will encourage if proven necessary.

I-2 Will encourage if proven necessary.

I-3 Will encourage if proven necessary.

APPROVED AS TO FORM:
/s/ GARY B. REINERS
CITY ATTORNEY

On motion of Councilmember Staley, seconded by Councilmember Kamena, the foregoing Resolution was passed and adopted this 15th day of August, 1977, by the following vote:

AYES: COUNCILMEMBERS Dahlbacka, Kamena, Staley, Turner and Mayor Tirsell

NOES: None

ABSENT: None

/s/ HELEN M. TIRSELL
Mayor, City of Livermore, California

ATTEST:

/s/ DOROTHY J. HOCK
City Clerk

I hereby certify that the above is a full, true and accurate copy of a Resolution adopted by the City Council of the City of Livermore on Aug 15 1977.
Livermore, Calif., Aug 30 1977.
Dorothy J. Hock City Clerk

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts

Mitigation Measures	Responsible Jurisdiction/Agency			
4 Geology/Soils	Planning	Implementing	Operating	*CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT*
1 Construction of residential, commercial, and public buildings within 50 feet of a potentially active fault trace should be prohibited.	Local planning departments	County Boards, City Councils	Local building departments	*Can be implemented because faults have been defined in the New General Plan*
2. To prevent potential slope stability problems, development of hillside areas should be prohibited unless detailed geotechnical studies regarding slope stability under both static and dynamic (seismic) conditions indicate the slope stability of a project site would not be adversely affected; under any conditions, slopes greater than 30 percent should not be developed.	Local planning departments	County Boards, City Councils	Local building departments	*Implementing through the General Plan and existing ordinances.*
3. Detailed erosion control contingency plans should be filed for developments in which grading activities could continue into the rainy season.	New ordinance required	County Boards, City Councils	Local building departments	*Implementing through existing ordinances.*
4. Class I and II soils should be preserved for agricultural uses wherever possible.	Local planning departments, and County agricultural departments	County Boards, City Councils	County agricultural departments	*Implementing through the General Plan.*

9-10

MITIGATION MEASURES

TABLE 9-7. Authority for Mitigation of Secondary Impacts (cont.)

tigation Measures / story/Archaeology	Responsible Jurisdiction/Agency			CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
	Planning	Implementing	Operating	
In order to plan for growth in such a way as to minimize the potential impact on historical/ archaeologic resources, the future LAVWMA Service Area should be surveyed by qualified archaeologists. From this survey, all archaeologic sites should be located and areas with the greatest potential for discovering buried remains should be delineated.	California Department of Parks and Recreation	State Historic Preservation Officer	Local university and museum staffs	*By others*
Provisions should be included in local regulations to insure that grading operations in undisturbed areas, particularly in areas designated as high potential for locating buried remains will not destroy or disrupt archaeologic or historic resources.	Local planning departments	County Boards, City Councils	Local building departments	*Can be undertaken. Is this a 3rd level impact?*
To avoid possible vandalism or destruction of known archaeological sites, the exact location of these sites should not be made public.	California Department of Parks and Recreation	State Historic Preservation Officer	N/A	

9-11

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
C Recreation	Planning	Implementing	Operating	*CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT*
• Increase funding to local parks and recreation agencies to insure the continuation of urban park land to meet increased demand.	Local planning departments	County Boards, City Councils	Local parks and recreation districts; EBRPD, VCSD, LARPD	*Have active program.*
2 • Protect areas planned for future park development from encroaching urban development. Such areas may be protected by outright public purchase or zoning requirements for dedication by land developers.	Same as above	---		*Have active program.*
D Aesthetics				
1 • Include open space -- parks, squares, and other types -- in urban development plans. This will lessen the visual impression of enclosure or artificiality which can be associated with urban places.	Local planning departments	County Boards	Local public works and parks departments	*Have active program*
2 • Preserve large amounts of open space near urban centers and on the Valley's uplands in order to maintain the natural setting of the Valley. Measures such as extremely low density zoning for the uplands are nearly as valuable as parks or other means.	Same as above	---		*Provisions in the General Plan*

9-12

MITIGATION MEASURES

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
5 Land Consumption	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
1. Protect lands which have intrinsic values, such as watersheds, recreational resources or visual backdrops, and prime agricultural lands.	Local planning departments, local parks and recreation agencies, County agricultural departments	County Boards, City Councils, LAFCO's	Local building departments, County agricultural departments, local parks and recreation agencies	*In General Plan*
2. Leave behind totally single-family dwelling neighborhoods. Higher residential density not only uses less land per residence, but also requires less land for road systems. This type of development provides for the needs of smaller families and households also.	Local planning departments	County Boards, City Councils	Local planning departments	*City provides for clustering and a variety of housing types and rewards overall low density*
3. Protect open space near urban fringes to preserve the individuality and identity of each city.	Local planning departments	City Boards, City Councils, LAFCO's	Local planning departments	*In General Plan*

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
Transportation-Related Measures				
1 • Expand and continue existing BARTD bus service	BARTD	BARTD, Counties Cities	BARTD, AC Transit	*Not practical in a small city at present.*
2 • Exclusive bus lanes	MTC, Caltrans, Local traffic departments	Caltrans, Counties Cities	BARTD, AC Transit	" " " "
3 • Contra-flow bus lanes	MTC, Caltrans	Caltrans	BARTD, AC Transit	" " " "
4 • Transit vehicle priority at signalized intersections	Local traffic departments	Cities	BARTD, AC Transit	*Not viable in Livermore*
5 • Park-and-Ride lots	BARTD, Cities	BARTD, Cities	BARTD, Cities	*Are in plans for future.*
6 • Bus passenger shelters	BARTD, Cities	BARTD, Cities	BARTD, Cities	" " " "
7 • Off-line or off-street bus stops	BARTD, City traffic departments	BARTD	BARTD, AC Transit	*Implementing*
8 • Improve transit connections with coordinated scheduling or routing buses	MTC, BARTD	BARTD, AC Transit District	BARTD, AC Transit	*Implementing*

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality /	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
Transportation-Related Measures				
9. Subscription commute bus service	City planning departments, BARTD, AC Transit	BARTD, AC Transit	BARTD, AC Transit	Have no plans for such plans at this time. Questionable practicality.
10. Dial-A-Ride bus service	City planning or public works departments, BARTD	BARTD, Cities AC Transit	BARTD, Cities AC Transit	" " " " "
11. BART rail service extension	BARTD, MTC	BARTD	BARTD	By others.
12. Utilization of existing rails for light rail transit	BARTD, MTC	BARTD	BARTD	By others.
13. Institute a car-pooling program for Valley commuters	MTC, Cities Counties	Cities, Counties, Employers	Cities, Counties, Employers*	Not practical for the City to implement.
14. Car pool toll reductions	Caltrans	Caltrans	Caltrans	By Others
15. Car pool vehicle lanes	Caltrans	Caltrans	Caltrans	By Others
16. Car pool on-ramp priority	Caltrans	Caltrans	Caltrans	By Others

* See Appendix I, Table 3 for major Valley Employers.

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
C Transportation-Related Measures				
17 • Reserved parking advantage for car pools	MTC	Shopping centers, employers	Implementors	By Others
18 • Lower parking rates for car pools	Same as above	Parking lot operators, public centers		By Others
19 • Auto free zones, pedestrian malls	City planning departments, and traffic departments	City Councils, County Boards	City & County public works departments	City can accomplish
20 • Local street barriers to through traffic	City traffic departments	City Councils, County Boards	City & County public works departments	It is not clear that this leads to improved air quality. It encourages shoppers to drive to other commercial areas.
21 • Expansion and continuation of bicycle lanes, with upgrading of existing facilities	City and County, traffic and planning departments	City Councils County Boards	City and County public works	City has active program.
22 • Provision of bicycle racks and locks at major attracting centers	City planning and traffic departments	City Councils, County Boards	City & County public works, Downtown Associations, Schools, Shopping Center Associations, Employers	City requires such racks (lock requirement not practical)

9-16

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
Transportation-Related Measures				
23 • Incorporate more pedestrian paths as part of the urban fabric where barriers to pedestrian movement exist	City planning departments	City Councils, County Boards	City & County public works	*The City has such a program.*
G Land-Use-Related Measures				
1 • Allocation of sewage capacity to appropriate land uses; commercial and industrial as well as some less expensive housing	City planning departments	City Councils, VCSD	City public works, VCSD	*City has implemented.*
2 • Attraction of commerce and industry which employs local residents	Local community development, and planning departments	City Councils, County Boards	Community Dev. Authorities, Chambers of Commerce	*City is encouraging this measure.*
3 • Relocation of industries employing in-commuters	Local planning departments and ABAG	See Footnote 1	N/A	*It is more feasible to encourage the industries to employ existing local people rather than to relocate the industries.*

[1] No legal authority exists for enforcing such a measure; however, there may exist some situations where the industry involved could be offered sufficient inducement by the local Valley jurisdiction and the receiving jurisdiction.

9-1

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	*CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT*
Land-Use-Related Measures				
4 • Higher density zoning to shorten and concentrate local travel	Local planning departments	City Councils, County Boards	Local planning departments	*Clustering accomplishes the same goals while maintaining overall rural atmosphere. Overall density should be kept low. The City provides for this.*
5 • Maintenance and redevelopment of existing city centers	Local planning departments	City Councils, County Boards	Redevelopment agencies	*The City is unique in having undeveloped areas in the C.B. zone and it is in the process of being developed.*
6 • Rezoning for cluster development and planned unit development	Local planning departments	City Councils, County Boards	Local planning departments	*City agrees with the principle the ordinances allow it.*
7 • Limit the spread of existing centers	Local planning departments	County Boards, City Councils	Local planning departments	*City has controls.*
8 • Alter tax assessment practice to protect open space and agricultural values	State Legislature	State Legislature	Local tax assessors	*By others.*
9 • Down-zoning of fringe lands	Local planning departments	County Boards, City Councils	Local planning departments	*OK*
10 • Utilize Section 66474 of the Subdivision Map Act	Local planning departments	County Boards, City Councils	Local planning departments	*N.A.*
11 • Restrict the extension of utilities such as sewage interceptors	VCSD, City sewage departments	VCSD, City Councils	VCSD, City sewage departments	*The City is controlling such expansion.*

9-18

APPENDIX C

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURE IT CAN EFFECT
G. Land-Use-Related Measures				
12. Marginal cost pricing of utilities extensions	VCSD, City sewage departments	VCSD, City Councils	VCSD, City sewage departments	Do not understand
13. Alter Federal (State) home finance policy to encourage infilling of centers	FHA, VA (CalVet)	Congress (State Legislature)	FHA (CalVet)	By others.
14. Establish a policy to disapprove rezonings and subdivisions outside of existing urban centers and incorporated boundaries	County planning departments	Alameda and Contra Costa County Boards of Supervisors	County planning departments	By others.
15. Green belts around established centers	Local planning departments	County Boards, City Councils	Local planning departments	Approve
16. Purchase of open space, scenic easements, and/or development rights	Local planning departments	County Boards, City Councils	Local planning departments	Approve
17. Employ flood and hazard zonings in conjunction with open-space zoning	Local planning departments	County Boards, City Councils	Local planning departments	Approve

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
3 Land-Use-Related Measures				
18 • Relate air quality standard achievement to further land development	Local planning departments, BAAPCD	County Boards, City Councils	Local planning departments, BAAPCD	*This has been done*
19 • Adopt an air quality element within local General Plans	Local planning departments	County Boards, City Councils	Local planning departments	" " " "
20 • Indirect sources review program	Local planning departments	County Boards, City Councils	Local planning departments	" " " "
21 • Limit Federal (State) home loans within critical air basins	FHA, VA (CalVet)	Congress (State Legislature)	FHA, VA (CalVet)	*By others*
22 • Establish a special transit district in commercial areas	Local planning departments	County Boards, City Councils	New agency required	*Will consider when warranted*
23 • Trade-off zoning ordinance parking space requirements for some form of transit system support, as free tokens	Local planning and traffic departments	County Boards, City Councils	Local planning and traffic departments	*May not improve air quality. May force travel to more convenient and remote shopping area*

9-20

APPENDIX C

MITIGATION MEASURES

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			CITY OF LIVERMORE RESPONSE TO MEASURES IT CAN EFFECT
Vehicular Travel/Air Quality	Planning	Implementing	Operating	
H Economic Measures				
1 • Freeway ramp metering	Caltrans	Caltrans	Caltrans	*By others.*
2 • Restriction of corridor capacity	Caltrans	Caltrans	Caltrans	" "
3 • Limit gasoline availability or increase gasoline prices	Federal Energy Administration	Congress	California State Agency	" "
4 • Increase public parking fees, tax private operators	MTC, Local parking authorities	City Councils, County Boards	Local parking authorities	*May not improve our quality May force travel to more convenient & remote shopping*
5 • Limit parking availability, and the time duration of parking	MTC, Local parking authorities	City Councils, County Boards	Local parking authorities	" " " " " "
6 • Commuter taxes	City and County Administration	County Boards, City Councils, See footnote 2	County tax Collector	*Disagree and question the legality and advisability.*
7 • Increase peak-hour bridge tolls	Caltrans	Caltrans	Caltrans	*By others.*
8 • Progressive vehicle ownership tax*	California DMV	State Legislature	California DMV	*By others.*

* Such a tax may be held by the courts to be illegal, being a restriction on the right to travel.

9-21

ISSUES TO RESOLVE

TABLE 9-1. Authority for Mitigation of Secondary Impacts (cont.)

Mitigation Measures	Responsible Jurisdiction/Agency			
Vehicular Travel/Air Quality	Planning	Implementing	Operating	CITY OF LIVERMORE RESPONSI TO MEASURES IT CAN EFFECT
Economic Measures				
• State income tax credit for transit and car pool commuters	Caltrans, MTC, State Franchise Tax Board	State Legislature	State Franchise Tax Board	By others.
• Monthly and family plan transit fares	BARTD, MTC, AC Transit	BARTD, AC Transit	BARTD, AC Transit	By others.
Institutional Measures				
• Staggered work hours • Shortened work week • Flexible or gliding work hours	MTC, ABAG	Employers, Unions, Trade Associations	Employers*, Unions, Trade Associations	By others.

* See Appendix I, Table 3 for major Valley Employers.

APPENDIX C

EXCERPTS FROM LIVERMORE COMMUNITY GENERAL PLAN, 1976-2000
CITY OF LIVERMORE, CALIFORNIA

(4) Soils and Agriculture Resources Policies

(a) The City shall control site preparation procedures and construction phasing to reduce erosion and exposure of soils to the maximum extent possible.

(b) The City shall prohibit construction on soils with "severe" and "very severe" erosion hazards unless it can be demonstrated that the project will not cause an increase in erosion or sedimentation.

(c) The City shall carefully control development on soils with "moderate" to "high" shrink-swell potential as to site grading, foundation design and construction to avoid site and structural damage resulting from those soil conditions.

(d) The City shall prohibit development on expansive soils which are subject to a high probability of sliding; developments proposed below areas of expansive soils in foothill and mountainous areas shall be conditioned to avoid damage from potential slide areas.

(e) The City shall take all possible steps to preserve the vineyards. Expansion of viticulture on lands rated "good and very good" for the production of wine grapes, as defined by the Soil Conservation Service shall be encouraged.

(f) The City shall maintain as agriculture and open space, grazing lands, defined as lands with an annual carrying capacity of one animal unit per acre as defined by the Soil Conservation Service, and "grassland soils" according to Stories' Generalized Soil Map.

(g) The City shall encourage the County to actively persuade agricultural landowners to enter the agricultural preserve program established under the Land Conservation Act, particularly in areas adjacent to patterns of urbanization encouraged by the General Plan and areas designated under Policy Nos. (e) and (f) above.

(h) The City shall give priority to the preservation of Class I and II soils, and favor agricultural use over expansion of mineral extraction operations on such lands. Furthermore, only agricultural and related uses shall be permitted in areas designated for exclusive agriculture.

(i) The City shall encourage soil conservation practices as recommended by the S.C.S.

LAND USE GOALS AND POLICIES

1. Goals

a. It is a goal of the City that future land use patterns reflect the community's overriding concern for the protection and enhancement of the environmental setting and the protection of the health, safety and general welfare of present and future residents.

b. It is a goal of the City that new development be located so as to create a consolidated pattern of urbanization, particularly with respect to minimizing the cost of urban services and achieving maximum public and private benefits from existing services and facilities.

c. It is a goal of the City that development within the Planning Area reflects the highest possible level of community design and image.

2. General Policies

a. A filling-in of neighborhoods where the development pattern is now fragmented.

b. Only modest expansion, in the short-range, of neighborhoods where new development has been a contiguous expansion of existing development.

c. Encouraging further contiguous development to fill in locations within existing neighborhoods.

d. The preparation and adoption of specific plans for "Planning Units" or neighborhoods which will include a schedule for extension of City services and facilities.

e. Development shall conform to adopted specific plans.

f. Except where special conditions warrant, the City shall allow development only on those properties immediately adjacent to established urban areas.

g. Planned open space within and adjacent to the City shall be preserved to implement the trailways system, preserve scenic and historical resources, provide common areas within higher density developments, and promote the public health, safety and welfare. Among other techniques, density rights transfer shall be given high priority for study and implementation. The use of development rights transfer may enhance the ability of the City to preserve resources and minimize the inequitable effects of more traditional land use devices. Specific studies shall be undertaken looking toward the creation of a comprehensive and integrated system of development rights transfer.

CITY OF PLEASANTON
OFFICE OF CITY ATTORNEY
30 WEST ANGELA STREET
P. O. DRAWER C
PLEASANTON, CALIFORNIA 94566
TELEPHONE (415) 846-3202

KENNETH C. SCHEIDIG
CITY ATTORNEY

HARVEY E. LEVINE
DEPUTY CITY ATTORNEY

September 8, 1977

MR. WILLIAM HELPHINGSTINE
United States Environmental
Protection Agency
Region IX
100 California Street
San Francisco, CA 94111

RE: CITY OF PLEASANTON - MITIGATION RESOLUTION

Dear Bill:

Enclosed you will please find a copy of Resolution No. 77-180 (A Resolution Identifying Mitigation Measures by the City of Pleasanton Regarding the LAVWMA Pipeline Project and Indicating the City's Commitment to Implement Said Measures) which has, at long last, been completed. You will note that I have incorporated the changes suggested by you in your letter of August 9, 1977, except for your recommendation as to the allocation of sewage capacity referred to on Page 2 of your letter. In reviewing the original language of Attachment E on this subject, I determined that it was no longer appropriate since the City was on the verge of establishing a residential allocation program. Thus, I have rewritten Page iii of Exhibit E to make reference to the residential allocation program.

I hope that this will meet the needs of the United States Environmental Protection Agency. If you should have any questions or comments, please advise.

Sincerely yours,

Kenneth C. Scheidig
City Attorney

KCS:vc

Enclosure

cc: Bob Bradford
Jerry Anders
~~Doug~~ Dan Sanders (URS)

CITY OF PLEASANTON
COUNTY OF ALAMEDA
STATE OF CALIFORNIA

RESOLUTION NO. 77-180

A RESOLUTION IDENTIFYING MITIGATION MEASURES BY THE CITY OF PLEASANTON REGARDING THE LAVWMA PIPELINE PROJECT AND INDICATING THE CITY'S COMMITMENT TO IMPLEMENT SAID MEASURES

WHEREAS, the cities of Pleasanton and Livermore, and the Valley Community Services District (VCSD) created a joint powers body entitled the Livermore-Amador Valley Water Management Agency (LAVWMA); and

WHEREAS, said agency was authorized by a joint powers agreement to undertake implementation of a project for disposing of sewage effluent from the above agencies; and

WHEREAS, the pipeline from the Valley to the East Bay paralleling I-580 has been selected by LAVWMA as the most viable project; and

WHEREAS, LAVWMA has caused an Environmental Impact Statement to be prepared regarding said project which has identified primary and secondary environmental impacts from the proposed project; and

WHEREAS, mitigation measures regarding the environmental impacts of the project have been established by LAVWMA and submitted to the Environmental Protection Agency for review; and

WHEREAS, EPA, by letter dated May 12, 1976, has indicated to LAVWMA its preliminary intention to fund the project, subject to translation of the mitigation proposals into formal mitigation commitments and the incorporation of these commitments into concept approval and Step 2 and Step 3 grant offer conditions; and

WHEREAS, LAVWMA cannot commit its member agencies to undertake mitigation measures except to the extent such action is undertaken by each separate agency; and

WHEREAS, the City of Pleasanton recognizes that the Livermore-Amador Valley presently suffers from some of the poorest air quality within the San Francisco Bay Region, resulting in significant health hazards and damage to agricultural crops and materials in the Valley; and

WHEREAS, the City of Pleasanton recognizes that the LAVWMA Project would have significant adverse secondary impacts, among these most notably the potential for air pollution, if mitigation measures are not taken; and

APPENDIX C

WHEREAS, the City of Pleasanton recognizes these potential adverse impacts, including air pollution, as serious problems for which the City shares responsibility, in whole or in part, with other jurisdictions to undertake mitigation measures to reduce said impacts; and

WHEREAS, the City of Pleasanton recognizes that certain of these impacts, especially air quality, are regional in scope and that cooperation with regional and other local jurisdictions is necessary in order to mitigate these effects; and

WHEREAS, the adverse impacts of the project will occur over a period of time and while immediate implementation of mitigation measures is not possible, continual awareness of and attempts at mitigation is desirable and necessary; and

WHEREAS, the City of Pleasanton recognizes that it has taken and can take appropriate action to mitigate the identified environmental impacts of the project.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PLEASANTON DOES RESOLVE AS FOLLOWS:

Section 1. The City of Pleasanton has adopted the following major measures which would mitigate the effect of possible secondary impacts:

a. Adopted a revised General Plan in February, 1976, which contains various elements which set forth the City's policies towards controlling growth and maintaining environmental quality (see Attachment A for a summary of the major growth and environmental protection policies);

b. Adopted an interim Limited Growth Policy in 1972 which is still in effect (see Attachment B for its provisions);

c. Adopted future population benchmark figures for Pleasanton as a means of controlling the future growth rate and revised the General Plan and capital improvement schedule to conform with these benchmarks (see Attachment C); and

d. Adopted an interim allocation plan for the Sunol Sewage Treatment Plant which makes provisions for commercial and industrial capacity while limiting the yearly number of hookups (see Attachment D).

Section 2. The City of Pleasanton commits itself to undertake the following measures:

a. Pursuant to a federal grant, the City has undertaken a study of a mechanism by which residential development can be allocated in a manner to abide by an E/O

growth rate and allow the best utilization of transportation, shopping and existing City services and facilities. The proposed Residential Allocation Program has been written and is anticipated to be adopted prior to January 1, 1978; and

b. Implement the measures listed in Attachment E which designate projects of a continuing nature and projects which will be studied for a determination of their feasibility when conditions warrant such study.

Section 3. The City of Pleasanton resolves to:

a. Continue to participate and cooperate as a member of the Association of Bay Area Governments (ABAG) in the development of an Air Quality Maintenance Plan for the San Francisco Bay Region;

b. Make reasonable efforts consistent with the resources and goals of this City to insure that the adopted Air Quality Maintenance Plan provides adequate means for mitigating any adverse impacts on air quality resulting from the proposed project; and

c. Upon adoption of the Air Quality Maintenance Plan by ABAG, and approval by the State and EPA, the City shall render reasonalbe assistance for implementation of said plan.

Section 4. Authorizes the City's LAVWMA members to provide to the LAVWMA Board of Directors a copy of this resolution and inform the Board, as well as State and Federal Agencies, of the City's position.

Section 5. This resolution shall be effective immediately upon its passage and adoption.

THIS RESOLUTION ADOPTED ON JUNE 27, 1977 BY THE FOLLOWING VOTE:

AYES: Councilmembers - Brandes, LeClaire, Mercer and Mayor Philcox

NOES: None

ABSENT: Herlihy

ATTEST:

ROBERT C. PHILCOX, Mayor

Alan B. Campbell, City Clerk

APPROVED AS TO FORM:

Kenneth C. Scheidig
City Attorney

Attachment A

Goals and Policies Relative to Growth Management and Environmental Quality

The basic goals and policy statements of the General Plan relative to growth management and environmental quality are listed below. The policies are tools which will be used in the implementation of the General Plan.

Goal 1: Growth Management and Balanced Community Development

To guide future development in the planning area mainly through a comprehensive growth management program intended to provide the proper balance among the development of future land uses and to insure that future urbanization is environmentally sound and is geographically a logical extension of existing development so that municipal services can be provided to new areas in an efficient and economical manner.

Policy Statement #1 - It is the policy of the City of Pleasanton to recognize as benchmarks the populations of approximately 43,300 for 1986 and 48,700 for 1996 (based upon the State Department of Finance's "E-Zero" growth projection) and to acknowledge a holding capacity of approximately 76,000 persons relating to ultimate development of the planning area beyond 1996 as shown on the General Plan Map.

Policy Statement #2 - It is the policy of the City of Pleasanton to develop a growth management program that will regulate zoning and subdivision approvals, as well as numbers, location, and timing in the issuance of building permits.

Policy Statement #3 - It is the policy of the City of Pleasanton to continue the City's current limited growth policy as an interim measure until certain critical questions dealing with air and water quality have been answered, the potential for future development is more accurately known, and the comprehensive growth management program has been implemented.

Policy Statement #4 - It is the policy of the City of Pleasanton to prioritize all areas slated for annexation based upon logical expansion of the city limits as part of a growth management program.

Policy Statement #5 - It is the policy of the City of Pleasanton to require annexation to the City as a pre-requisite of utility extension.

Policy Statement #7 - It is the policy of the City of Pleasanton that the 1996 urbanization line shown on the General Plan Map be strictly adhered to and that any urbanization proposed within the planning area outside of that line be strongly discouraged.

Policy Statement #8 - It is the policy of the City of Pleasanton to ensure that varying types of land uses within the planning area are arranged and designed in such a manner that they are mutually compatible each with the other.

Goal 2: Environmental Quality

To protect and improve the environmental quality of the planning area - its air, surface and groundwaters, scenic views, vegetation, wildlife and soils.

Policy Statement #1 - It is the policy of the City of Pleasanton to maintain as open space all steeply sloping land and to encourage the use for agricultural purposes of as much high quality agricultural land within the planning area as practical.

Policy Statement #2 - It is the policy of the City of Pleasanton to work closely with all governmental agencies responsibile for making decisions which affect the physical environment of the Amador-Livermore Valley, especially those organizations responsible for controlling air and water quality, in order to find solutions to local environmental problems.

Policy Statement #3 - It is the policy of the City of Pleasanton to identify and preserve those natural habitats within the planning area which support rare and endangered species of plants and animals.

Policy Statement #4 - It is the policy of the City of Pleasanton to preserve all stream beds and channels within the planning area in their natural state except where such preservation is inconsistent with flood and erosion control measures necessary for public health and safety.

Policy Statement #5 - It is the policy of the City of Pleasanton to influence natural resource production in such a manner that farsighted, ecologically and aesthetically sound management practices on the part of producers become the norm, and where extractive industries are involved to insure that appropriate reclamation takes place following extraction.

APPENDIX C

Policy Statement #6 - It is the policy of the City of Pleasanton to strive for the development of a visually pleasing community in which structures and surroundings are related in a harmonious and functional pattern: the "heritage theme" for architecture will be continued in downtown Pleasanton.

Policy Statement #7 - It is the policy of the City of Pleasanton to carry out sound solid waste disposal practices and to participate in the preparation and implementation of a county-wide solid waste management plan.

Policy Statement #8 - It is the policy of the City of Pleasanton to encourage energy conservation through the environmental and development review processes of the City.

Attachment B

Pleasanton Limited Growth Policy

The provisions of the limited growth policy are set out below:

1. The Planning Commission and staff defer consideration of further annexations to the City except for small unincorporated pockets of land adjacent to the City for which commitments for sewage treatment capacity are insignificant and where it is in the public interest to correct irrational City boundaries and gain control of an area which serves only as a drain on City's services, or areas for which municipal type services are already provided.

2. The Planning Commission and staff defer consideration of further rezonings except for possible commercial and industrial developments that would broaden the tax base.

3. The Planning Commission and staff refrain from accepting residential tentative maps to the extent legally feasible based upon advice from the City Attorney, and seek through possible rezonings to reduce the existing residential commitments of the City.

4. That the Planning Commission and staff be advised that this policy will be in effect until the V.C.S.D. Sewage Treatment Plant is expanded and is capable of accommodating additional development over and above current commitments, or January 1, 1976, whichever is earlier.

Attachment C

CITY OF PLEASANTON
COUNTY OF ALAMEDA
STATE OF CALIFORNIA

RESOLUTION NO. 75-236

A RESOLUTION ESTABLISHING POPULATION BENCHMARKS FOR INCLUSION IN THE TENTATIVELY ADOPTED GENERAL PLAN AND AUTHORIZING THE PREPARATION OF AN IMPLEMENTATION PROGRAM

WHEREAS, the City Council tentatively adopted a new General Plan on December 17, 1973 which attempted to indicate contemplated development within the community within the next twenty years; and

WHEREAS, said general plan established an ultimate holding capacity of 76,000 people pursuant to recommendations of the Citizens Review Committee; and

WHEREAS, a final plan has not been adopted pending the outcome of an economic analysis and development of additional mandatory elements to the General Plan; and

WHEREAS, the attainment of the development goals in said General Plan is contingent upon the existence of adequate sewage facilities to accommodate said development; and

WHEREAS, the City has been working with Valley Community Services District, the State Water Resources Control Board, and the Environmental Protection Agency in an endeavor to ensure that sufficient provision will be made for sewage facilities to accommodate the City's antiquated sewage treatment plant (Sunol) as well as reasonable residential industrial and commercial development; and

WHEREAS, the City Council by Resolution No.74-212 retained the option of constructing its own sewage treatment plant should consolidation with Valley Community Services District become impractical and said project is known as Alternative 5-b, and

WHEREAS, the City has undertaken every available mechanism to establish the needed sewage facilities including, but not limited to, litigation against Valley Community Services District, meetings with local, state and federal agencies and meetings with state and national legislative leaders; and

WHEREAS, funding at sewage facilities is dependent upon state and federal funding of 87.5% of the costs of development and construction of said facilities; and

WHEREAS, the City is located in the Livermore-Amdor Valley which is designated an air-impacted area; and

WHEREAS, the state and federal agencies responsible for allocating and administering sewage grant monies have adopted the concept of funding projects on the basis of population in order to minimize further air quality degradation; and

WHEREAS, the State Department of Finance has by its latest calculations (using an E-O population projection II series) determined that Pleasanton should contain, for funding purposes, no more than approximately 48,700 individuals by 1996; and

WHEREAS, the Environmental Protection Agency has indicated that communities desiring federal funding will have to indicate their willingness to adopt mitigation measures; and

WHEREAS, the adoption of population figures in line with those of the state is deemed to be a mitigation measure based upon existing environmental constraints; and

WHEREAS, the Planning Commission considered a staff report dated October 24, 1975, together with attached exhibits, in order to make a recommendation to the City Council; and

WHEREAS, members of the public were allowed to present their views regarding the staff report and recommendations therein; and

WHEREAS, the Planning Commission, after taking testimony, adopted Resolution No. 1376 (A Resolution Recommending the Establishment of Population Bench Marks to the Tentatively Adopted General Plan), and

WHEREAS, the City Council held a special meeting on November 3, 1975, to consider the recommendations of the Planning Commission, staff and interested members of the public;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PLEASANTON DOES RESOLVE AS FOLLOWS:

Section 1. Adopts and incorporates by reference the factual enumeration set forth in Planning Commission Resolution No. 1376.

Section 2. Adopts and incorporates by reference the recommendations of the Planning Commission regarding the tentatively adopted General Plan as set forth in Resolution No. 1376 to wit:

(a) The population of the community by 1996 will consist of approximately 48,700 individuals.

(b) Although a population of approximately 48,700 will exist by 1996, the ultimate population within the planning area of the City of Pleasanton should approximate 76,000 individuals, as recommended by the Citizens Review Committee; this population should be attained at some date subsequent to 1996.

(c) An allocation system should be incorporated which would ensure that the development of the City of Pleasanton from 1976 thru 1996 will be achieved in a logical, sequential manner, recognizing that the initial years of development may be affected by limitations upon the City's flexibility due to provisions of the November 8, 1972 settlement agreement and other judgments and contracts which may be determined to be legally binding. This allocation system should attempt to provide for a mixture of residential, commercial and industrial growth within the next twenty years and, as far as feasible, endeavor to advise property owners of the potential

APPENDIX C

tice table within which ultimate development of their property may be contemplated.

Section 3. This resolution shall become effective immediately upon its passage and adoption.

Dated: November 3, 1975

EDWARD J. KINSEY, Mayor

Attest:

William H. Edgar, City Clerk
By Doris George, Deputy

APPROVED AS TO FORM:

Kenneth C. Scheidig
City Attorney

Attachment D

CITY OF PLEASANTON
COUNTY OF ALAMEDA
STATE OF CALIFORNIA

RESOLUTION NO. 76-83

A RESOLUTION ESTABLISHING ON AN INTERIM BASIS, A METHOD FOR ALLOCATING ADDITIONAL SINGLE FAMILY DWELLING UNIT EQUIVALENT SEWER CONNECTIONS AT THE SUNOL SEWAGE TREATMENT PLANT FOR PROPERTIES LOCATED WITHIN THE SUNOL SERVICE AREA.

WHEREAS, the City of Pleasanton is served by two sewer service districts - one being served by a plant belonging to the City on Sunol Boulevard and the other by a plant belonging to the Valley Community Services District north of the Arroyo Hocho and east of I-680; and

WHEREAS, these separate service areas were first established by an agreement between V.C.S.D. and the City on June 14, 1967, as part of the implementation of a three stage phase-out of the Sunol plant into the V.C.S.D. plant; and

WHEREAS, the phase out of the City's Sunol sewage treatment plant (hereinafter referred to as either "plant," or "Sunol," or "Sunol STP") has been recommended in various sewage studies since approximately 1958; and

WHEREAS, the Regional Water Quality Control Board, San Francisco Bay Region (the agency charged with overseeing sewage disposal plants) and its predecessor, have consistently recommended and worked toward an eventual phase-out of Sunol; and

WHEREAS, said elimination of the Sunol STP has been considered desirable due to the fact that the original components of the plant were constructed in 1911; the plant has been added to and modified on a piecemeal basis but has never been designed as a single entity; components of the plant are difficult to acquire due to "their "antiquity"; and development has occurred east of and in close proximity to the plant; and

ORIGINAL

WHEREAS, by a settlement agreement dated November 8, 1972, and exhibits thereto the boundaries of the two, aforementioned service areas have been more particularly delineated and the eventual phase-out of the Sunol facility is dependent upon expansion of the V.C.S.D. sewage treatment plant; and

WHEREAS, the establishment of new discharge standards pursuant to the Clean Water Act of 1970 and the Porter-Cologne Act of 1970, as well as action by the Environmental Protection Agency to protect air quality in the Livermore-Amador Valley has resulted in a delay in implementing the expansion of the V.C.S.D. facility to accommodate the Sunol plant; and

WHEREAS, the Regional Water Quality Control Board has imposed cease and desist orders against the Sunol STP, together with connections bans, especially due to odors which have emanate from the plant; and

WHEREAS, in order to alleviate the causes for imposition of the cease and desist orders, the City Council authorized and improvements have been made to the plant in excess of $500,000; and

WHEREAS, the improvements referred to above, resulted in a partial lifting of the connections ban on March 18, 1975, by the Regional Water Quality Control Board as to 250 single family dwelling unit equivalent sewer connections; and

WHEREAS, the City informed the Regional Board in February of this year it wished to obtain additional connections to the Sunol STP; and

WHEREAS, the Regional Board's Executive Director prepared a staff report and tentative order for the Regional Board meeting of March 16, 1976, wherein the Executive Director noted that "The City of Pleasanton has implemented all of the reasonable odor control measures that have been identified" and recommended that "the restriction on additional connections to the City's sewer system should be removed if the March

-2-

APPENDIX C

odor survey does not show any increase in odor complaints"; and

WHEREAS, the Executive Director further noted that "the threat of odor nuisances will remain until the sewage treatment plant is abandoned and a new plant is constructed or the waste is consolidated with Valley Community Services District"; and

WHEREAS, the eventual elimination of the Sunol STP is dependent upon decisions relative to the V.C.S.D. plant, the construction of the Livermore-Amador Valley Water Management Agency's effluent pipeline to East Bay Dischargers Authority's facilities for effluent disposal into San Francisco Bay, and a decision regarding possible construction of a new treatment plant (alternative 5-b) by the City; and

WHEREAS, the best possible forecast at this time indicates that the Sunol STP may be operating for an additional 5 years before it will be possible to implement its phase-out; and

WHEREAS, the City staff prepared a report for the City Council entitled "Report on Allocation of Remaining Capacity at Sunol Treatment Plant," dated April, 1976 attached hereto as Exhibit A and incorporated herein by reference; and

WHEREAS, said report indicates that the estimated present flow at Sunol is approximately 1.45 M.G.D., the estimated design capacity is approximately 1.7 M.G.D., and thus the remaining unallocated capacity is approximately 250,000 gallons; and

WHEREAS, said report also advised that there are sewer connections which have been issued from the 250 received in March, 1975 which have not as yet connected to the Sunol STP; and

WHEREAS, the effect of present outstanding connections and future connections on the Sunol plant must be closely regulated and monitored in order to insure that future nuisance odors are controlled; and

WHEREAS, the City Council adopted a revised general plan on February 9, 1976, (Resolution No. 76-27) which includes direction to the staff to undertake the preparation of an implementation program to effectuate the goals, objectives and policies of the general plan and especially to devise a program for determing the appropriate method of allocating development within the community on a logical basis over the 20 year period proposed in said plan; and

WHEREAS, the staff is in the process of undertaking the necessary studies to prepare said allocation program for all of the City of Pleasanton, but said plan is not expected to be available for review and adoption before the Spring of 1977; and

WHEREAS, an interim program for allocating sewer connections to Sunol is desirable in order to insure that the facility can be adequately monitored and controlled pending completion of the City-wide allocation program designated in Resolution No. 76-27; and

WHEREAS, the City Council at its meeting of April 12, 1976, considered the aforementioned staff report, verbal staff comments made at said meeting, public testimony and the contents of a draft resolution prepared by the City Attorney.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PLEASANTON DOES RESOLVE AS FOLLOWS:

Section 1. CAPACITY. Determines that the Sunol STP has a present flow of approximately 1.45 M.G.D., a present capacity of approximately 1.7 M.G.D., thus leaving approximately 250,000 gallons of additional capacity to be allocated.

Section 2. OBJECTIVES. Determines that the Sunol STP will not be phased out or replaced prior to 1981, at the earliest, and that prudent management of the remaining capacity necessitates the establishment of an allocation system capable of attaining the following:

a. operation of the Sunol STP without the reoccurrence of nuisance odors;

b. elimination of substantial numbers of issued sewer connections which are not discharging into the Sunol STP;

c. review of effect upon the plant's operation and treatment capabilities of additional sewer connections;

d. allow development within the Sunol STP service area to continue while plans for eventual phase out or replacement of said plant are implemented by local, regional, state and federal agencies;

e. insure that the goals of the General Plan are realized;

f. provide the City with flexibility to meet emergency situations which may arise;

g. prohibit overtaxing of the physical and treatment capability of the Sunol STP.

Section 3. INTERIM PROGRAM. Determines that the allocation program established by this resolution shall remain in force and effect until such time as the plan for allocating development within the entire City as more particularly set forth in Resolution No. 76-27 (A Resolution Establishing a Revised General Plan) has been adopted by the City Council.

Section 4. ALLOCATION CONSIDERATIONS. Unless amended by action of the City Council, and subject to specific allocation by the Council no more than 140 single family dwelling unit equivalent sewer connections in the sunol STP sewer service area will be permitted annually, beginning with the date of adoption of a specific resolution allocating sewer connections.

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The City Council reserves the right to determine on a six months review basis the exact number of annual connections, if any, which may be allowed. In making its determination the City shall consider the following:

a. Periodic reports from the City Manager's office regarding operation of the Sunol plant and the effects of past allocations upon the plant. Said reports shall be prepared at least every six months, although more frequent reports are desirable.

b. The number of connections previously authorized but unissued.

c. The number of connections previously authorized which have been issued but which are not yet discharging to the Sunol plant.

d. Requests for allocation of additional connections and the affect of those additional connections upon the operation and treatment capabilities of the plant.

e. Need for adjusting units between different allocation categories (i.e., single family, multiple, commercial, industrial and other) and the effect of such adjustment upon the goals and objectives of the General Plan.

f. Comments received from members of the public prior to determining the next allocation, if any.

Section 5. ALLOCATION. The units to be allocated pursuant to this program shall be allocated, as nearly as possible, in accordance with the following percentages:

Residential	52%
Multiple	23%
Commercial	17%
Industrial	8%

This percentage allocation will allow the Sunol service area to move toward achievement of the General Plan objectives

regarding land usage for that area by 1996. The City Council however, reserves the right to allocate sewer connections on a different percentage every six months based upon the Council's opinion as to community needs. Provided, however, that the Council intends to achieve the above percentage goal eventually by later adjustments to the allocation percentages as to each use in the Sunol service area.

Section 6. ELIGIBILITY. In order to be eligible for any permits allocated pursuant to this resolution, an applicant must have obtained all required governmental approvals for his/her project, except for building plans. Thus, for example, a single family development must have obtained zoning, tentative map, and final map approvals and complied with the conditions set forth in said approvals and by City ordinances and state law before he/she may apply for any available sewer permits for single family dwellings.

Section 7. TIMING. Each resolution of the City Council specifically making an allocation of sewer permits shall contain a section specifying the time within which permits must be obtained. Said section shall be in compliance with the following:

a. Single Family Units. Except as otherwise expressly provided by the City Council, the required sewer connection fee for single family units shall be paid to the Building Division of the Department of Community Development within 60 days of the adoption of a specific resolution allocating sewer connections for single family dwelling units. The necessary building plans must be submitted to the aforementioned department for plan checking and review within said 60 day period. Any units which have not been requested within 60 days from the date of the adoption of this resolution shall be subject to re-allocation to any other use category

set forth herein at the discretion of the City Council. Any sewer connection fees which have been paid but for which no development plans have been submitted for review within the time period specified above, shall be deemed forfeited.

b. Multiple Family Dwelling Units. Except as otherwise expressly provided by the City Council, any sewer connections for multiple family dwelling units shall be allocated to developers who have received design review approval. After receipt of said approval the necessary sewer connection fee shall be paid and necessary building plans must be submitted to the Building Division of the Department of Community Development. Said permits must be paid for within 60 days from the adoption of a specific resolution allocating sewer connections for multiple family dwelling units and plans submitted within 90 days of the date upon which the sewer connection was paid. If the necessary plans have not been submitted pursuant to the time period specified above, the City Council may, at its discretion, allocate said units to any other use category set forth herein, and the fees which have been paid, shall be deemed forfeited.

c. Commercial Uses. Except as otherwise expressly provided by the City Council, sewer connections for commercial development shall be reserved for a period of one year from the date of adoption of a specific resolution allocating sewer connections for commercial uses. Said units shall be distributed to developers only upon conclusion of Design Review approval and payment of the necessary sewer connection fee. Building

plans shall be submitted to the Building Division of the Department of Community Development within the above time limit, otherwise the fees which have been paid shall be deemed forfeited and the City Council may at its discretion allocate these units to any other use category specified in this resolution.

d. Industrial. Except as otherwise expressly provided by the City Council, sewer connections for industrial development shall be reserved for a period of one year from the date of adoption of a specific resolution allocating sewer connections for industrial use. Said units shall be distributed to developers only upon obtaining Design Review approval and the payment of the necessary sewer connection fee. Building plans shall be submitted to the Building Division of the Department of Community Development within the above time limit, otherwise the fees which have been paid shall be deemed forfeited and the City Council may, at its discretion, allocate these units to any other use category specified in this resolution.

e. Miscellaneous. Any development which does not fall within one of the use categories listed above shall be assigned a time limit within which it must acquire allocated sewage connection units in the resolution specifying said allocation. The City Council shall also have to indicate from which category the sewer units for miscellaneous units shall be deducted.

ection 8. EXTENSIONS.

a. The City Council may at is discretion grant individual extensions upon request and upon showing of good cause for the need for such extensions.

b. If the building plans have been submitted to the Building Division of the Department of Community Development within the time period specified above for each use category, or such other time period specified the City Council, and the necessary plan checking has not been completed within said time period no forfeiture of fees shall occur.

Section 9. MISCELLANEOUS

a. Unless otherwise expressly provided by the City Council all sewer connections referred to in the above use categories shall be issued by the Building Division of the Department of Community Development on a first come, first served basis. If any sewer connections are expressly designated for a particular user they shall be held for each specified user until such time as the time limits referred to in the specific allocation resolution have expired and then may be distributed, on a first come, first served basis, at the discretion of the City Council.

b. Unless otherwise expressly provided by the City Council, within 14 days after building plans have been approved by the Building Division of the Department of Community Development, the required building permit shall be obtained. Failure to obtain a building permit within the time period specified herein shall cause the outstanding sewer connection permit to become void and the fee paid shall be deemed forfeited.

c. Any building plans submitted pursuant to this resolution, in order to toll the running of the time limits herein shall be of a quality acceptable to the Chief Building Inspector of the Building Division of the Department

of Community Development. No plans shall be acceptable which are rudimentary plans and it is the opinion of the Chief Building Inspector that they do not meet normal City standards to allow plan checking review.

Section 10. REVOCATION OF CONNECTIONS. The sewer connection allocation program specified in this resolution, and the actual allocations made by subsequent specific resolutions, are made possible as a result of the release of a building connections ban against the Sunol STP by the Regional Water Quality Control Board. Said release was obtained due to actions authorized by the City Council and the expenditures of over one-half million dollars at a sewage treatment plant which will either be replaced or phased out within approximately five years. Although the City Council will endeavor to keep the Sunol STP operating within the standards established by the above Board, the City Council cannot guarantee that any sewer connections which may be allocated will be available indefinitely. The Regional Water Quality Control Board acts independently of the City of Pleasanton and its future actions and requirements regarding sewage treatment disposal are subject to change. The City Council may revoke allocated unissued sewer connections or issued sewer connections where substantial improvements have not been performed if the Council determines that the public health, safety, and general welfare require such revocation of connections. The Assistant City Manager/Director of Public Works, in consultation with the Chief Building Inspector, shall determine if substantial improvements exist which would prevent revocation of an issued sewer connection. The Assistant City Manager's determination shall include, but not be limited to, consideration of actual physical

APPENDIX C

improvements made to each building site for which a sewer connection has been issued. Revocation of an issued sewer connection shall occur when the holder of the sewer connection has been advised, either orally or in writing, of said revocation by the City Manager, or his representative, and by tendering reimbursement of the appropriate fees. The same revocation procedure shall apply to any action of the Regional Board reimposing a connection ban upon the Sunol STP.

Section 11. ALAMEDA COUNTY FAIR. The City Council expressed its intent to continue the present procedures regarding operation of the Sunol STP during the Alameda County Fair. These procedures include:

a. Operating the plant with a full staff seven days a week during the Fair operation and the following clean-up period.

b. Coordinating with Kaiser Industrial Research for discharge of the wastewater from its holding tanks so that they occur only during off-peak hours at night at the plant.

In addition, the City Council will request that the Alameda County Fair perform an in-house sewer survey to identify possible areas where sewage flow from that facility can be reduced. Once the above survey is completed, the City would seek the cooperation and assistance of the Fair Board of Directors in implementing reasonable procedures to reduce waste quantity discharges to the City sewerage system.

Section 12. REVIEW. The City Council directs the staff to review existing ordinances and procedures pertaining to disposal of sewage into the sewage system and operation of the

Sunol STP. Any reasonable changes to ordinances or procedures of operation which will assist in improving and maintaining the viability of the plant should be considered for implementation and, where appropriate, brought to the attention of the City Council.

Section 13. PUBLICATION. The City Clerk shall cause a copy of this resolution to be published in the Pleasanton Times as soon as possible in order to insure greater dissemination of the allocation program set forth herein.

Section 14. The City Clerk shall transmit a copy of this resolution to the Regional Water Quality Control Board, San Francisco Bay Region, the Alameda County Fair Board of Directors and such other persons, organizations or groups who may request a copy of the same.

Section 15. This resolution shall become effective immediately upon its passage and adoption.

DATED: April 12, 1976

Robert C. Philcox, Mayor

Attest:

William H. Edgar, City Clerk

Approved as to Form:

Kenneth C. Scheidig,
City Attorney

Attachment E

Mitigation Measures Planned or Presently Instituted By Category

Geology/Soils

Faults - The City presently implements the provisions of the Alquist-Priolo Act which prohibit construction within fifty (50) feet of a fault trace.

Slope Stability - The adopted Conservation Element of the General Plan contains a policy restricting construction on slopes of greater than twenty-five (25) percent; new development must be consistent with this policy. Most of the unstable slopes in the planning area are now designated as open space.

Erosion - Currently the provisions of the UBC are enforced which is adequate for the predominantly flat land thus far developed. A new, comprehensive grading ordinance is now in draft stage and is hoped to be adopted within a year.

Agricultural Soils - The adopted Conservation Element contains a policy the preservation of Class I and II soils wherever possible; about 200 acres within the City and about 1,650 acres within the planning area are now designated as agricultural lands.

History/Archaeology

Grading Regulations - A draft comprehensive grading ordinance has recently been completed, prior to adoption, the feasibility of including a section designed to protect historical and archaeologic sites will be studied.

Recreation

Park Funding - Park acquisition and development are objectives of the Conservation Element; funds for these purposes are allocated in the 20-year capital improvement schedule. The Park Land Dedication Ordinance is presently being revised to provide more flexibility in park development; the revision should be completed within several months.

Future Parks - Future parks are shown on the adopted Land Use Map and it is a Conservation Element policy to proceed with their acquisition. The City's Park Land Dedication Ordinance, bedroom tax, and other means are used to acquire these parks.

Aesthetics

Urban Open Space - The adopted General Plan allocates parks throughout the City, including linear parks/open space along stream courses and as buffers between various land uses. Existing zoning and subdivision ordinances require open space areas accompany development.

Large Open Space Areas - The Conservation Element contains a policy protecting all large continuous areas of open space from urban intrusion. Some 10,580 acres of the 28,000 acre planning area are designated as open space. In addition, 5,200 acres of sand and gravel harvesting area and 1,985 acres of low density residential area provide major open space values.

Land Consumption

Protection of Lands of Intrinsic Value - The Conservation Element designates all remaining lands of intrinsic value recharge areas, outstanding scenic areas, valuable park sites - as park land or open space.

Higher Residential Density - The adopted General Plan allocates land so that future construction will be sixty-seven (67) percent single family, thirty-three (33) percent multiple compared to the present nineteen (19) percent multiple. Multiple residential density will average 15 units per acre. Besides the actual land use designation with which zoning must be consistent, the General Plan contains policies to effectuate this increased residential density.

Open Space Near Urban Fringes - The General Plan designates lands surrounding the urbanized portion of the city as open space or as open space functioning designations such as agriculture and sand and gravel harvesting.

VMT/Air Quality

Transportation Related Measures

BART - The City is committed to securing continued BART bus service to Pleasanton and to a future fixed rail line. The General Plan designates sites for future BART stations at or near major commercial and employment centers.

Park and Ride Lots and Bus Shelters - Pleasanton recognizes both of these as potentially useful means to encourage mass transit usage and is committed to studying the feasibility and effectiveness of these measures at a time in the future when Pleasanton's ridership reaches a level to warrant such action.

Dial-A-Ride - Although a recent study found a City-wide system unfeasible, Pleasanton commits itself to participate in a valley-wide feasibility study of a valley transit system.

Bicycle Lanes - Expansion and continuation of the existing bicycle lane plans is a continuing project.

Bicycle Racks - Racks with lock provisions will be a standard condition of approval for major attracting centers. The City will install such facilities at governmental installations (buildings, parks, playgrounds, etc.) presently lacking such facilities and at all new developments likely to attract bicyclists.

Land Use Related Measures

Residential Allocation Program - Since March of 1976, Pleasanton has regulated the number of residential, commercial and industrial users who would develope each year in the Sunol sewer service area. The City will soon be implementing a Residential Allocation Program (RAP) which will be effective city-wide. Due to the past emphasis upon residential construction, the program will not regulate commercial and industrial uses. Although no specific reservation of development units is contemplated to be assigned solely to commercial and industrial users, the City is desirous of encouraging them. The Council retains complete flexibility to determine whether specific reservations for commercial and industrial uses should be made and whether said reservations should be exclusively for such uses.

Attraction of Commerce and Industry - The adopted General Plan allocates abundant commercial and industrial area within the City to provide for a balanced community.

Reduce In-commuting to Valley Industries - The Housing Element contains policies aimed at providing housing for all economic segments of the population. Provision of housing for those employed in the valley is part of the goal of achieving a balanced community.

Higher Density Zoning - Future development of the City will take place at a greater density than currently exists as mandated in the General Plan. Zoning changes to bring the zoning ordinance into consistency with the General Plan have begun and will continue to be made until consistency is reached.

Redevelopment - The General Plan mandates the ultimate recycling of the existing downtown residential area into multiple residential housing.

PUD's - Pleasanton is currently revising its PUD ordinance; many areas of the City - residential, commercial, and industrial are zoned PUD.

Limiting the Spread of Existing Centers - The General Plan provides for new major and neighborhood shopping centers away from the existing downtown. However, each area is in itself compact and the major regional shopping center is planned to be served by mass transit.

Fringe Lands - The adopted General Plan has reduced the planned holding capacity of the City from 122,000 to 76,000 persons by eliminating development on the City's fringe and reducing densities in other areas. Further, a 20-year urbanization limit line has been adopted, beyond which City utilities will not be provided during the next 20 years which effectively excludes other areas from short-term development.

Restrict Extension of Utilities - The City has adopted policies (1) requiring annexation prior to the extension of utilities, (2) urging that all urbanization with Pleasanton's sphere of influence be municipal, and (3) that the 20-year urbanization line (which essentially includes only areas already served by utilities) be strictly adhered to. These policies taken together effectively restrict the extension of utilities.

Open Space, etc. - The Conservation Element and General Plan Land Use Map designate areas of open space use. The Conservation Element suggests many ways of securing these areas as open space. The City, under mandate of State law, will develop and implement an open space ordinance designed to further the policies of the General Plan with respect to open space preservation.

Flood Hazard Zoning - Pleasanton implements the NFIA for flood hazard areas and the Alquist-Priolo Special Studies Zones Act for seismic hazards. Other hazardous areas have been designated as open space in the General Plan.

Relate Air Quality Standard Achievement to Development - Until further air quality analysis has been completed, this is unfeasible. Once sufficient data is present, the City will commit itself to studying the feasibility of such a measure. This factor is being considered for inclusion in the growth management program's allocation scheme when sufficient information becomes available.

Indirect Source Review Program - Aside from project environmental analysis which is on-going, the growth management program study will consider the applicability of incorporating this type measure in the allocation scheme.

APPENDIX C

VALLEY COMMUNITY SERVICES DISTRICT

General Offices 7051 Dublin Boulevard • Dublin, California 94566 • (415) 828-0515

March 16, 1977

RECEIVED
MAR 1
DIVISION OF WATER QUALITY

Mr. Larry F. Walker, Division Chief
Manager - Clean Water Grant Program
Division of Water Quality Control
State Water Resources Control Board
P. O. Box 100
Sacramento, California 95801

Dear Mr. Walker:

Enclosed herewith is a certified copy of Resolution No. 16-77 of the Board of Directors of the Valley Community Services District, relating to an Air Quality Maintenance Plan. This Resolution was adopted by our Board at its regular meeting held on Tuesday, March 15, 1977.

It is our understanding that our Board's adoption of this Resolution also fulfills the requirement for the Livermore-Amador Valley Water Management Agency's Air Quality Maintenance Plan.

If you have any questions, please contact the undersigned.

Very truly yours,

PAUL RYAN
General Manager

PR:rj
encl.

cc: Mr. Bob Scholar, San Francisco Bay Region
Regional Water Quality Control Board
Mr. Bill Helphingstine, Region IX, EPA
Mr. Gil Wheeler, State Water Resources Control Board
Mr. John Davis, LAVWMA
Miss Peggy McElligott, District Counsel

RESOLUTION NO. 16-77

A RESOLUTION OF THE BOARD OF DIRECTORS OF
THE VALLEY COMMUNITY SERVICES DISTRICT
RELATING TO AIR QUALITY MAINTENANCE PLAN

WHEREAS, the Board of Directors of the Valley Community Services District has heretofore reviewed in detail the final environmental impact statement of the proposed Wastewater Management Program for the Livermore-Amador Valley, Alameda County, California, prepared in connection with the proposed construction of a project to export treated sewage effluent to the East Bay Interceptor via an export pipeline, or another acceptable pipeline route;

WHEREAS, it has been proposed that the Valley Community Services District Sewage Treatment Plant be enlarged to provide capacity for wastes now being treated by the Sunol Plant of the City of Pleasanton as well as for certain areas tributary to it;

WHEREAS, as a condition of grant funding of the proposed export pipeline project for the Livermore-Amador Valley Wastewater Management Agency and the construction of said Sunol capacity, it is necessary for the Valley Community Services District to provide for any possible adverse secondary impacts upon the environment, in particular the ambient air quality;

NOW, THEREFORE, IT IS HEREBY RESOLVED, DETERMINED, and ORDERED that

1. In implementation of any grant condition related to either the proposed Valley Community Services District proposed plant expansion to serve the Sunol consolidation and as a participant in the proposed funding of the LAVWMA export pipeline because of its membership in LAVWMA, the Valley Community Services District Board of Directors hereby agrees, on behalf of said District, to provide all reasonable assistance, information, and data within its statutory authority for the development of an Air Quality Maintenance Plan covering the project service area more specifically set forth in the environmental impact statement referred to above.

2. That upon adoption of an Air Quality Maintenance Plan pursuant to law, the Valley Community Services District shall render such reasonable assistance as may be within its statutory authority for the implementation of said plan, it being understood that the District has no legal authority to enforce air quality standards within its jurisdictional boundaries.

* * * *

ADOPTED by the Board of Directors of the Valley Community Services District at its meeting held on the 15th day of March, 1977, and passed by the following vote:

AYES: 5 - Directors Lila Euler, D. Ronald Hyde, Richard H. Fahey, Ann Jolley, and L. C. Ladner
NOES: 0
ABSENT: 0

L. C. LADNER, President

ATTEST:

ROBERTA JESSING, Secretary

CERTIFIED AS A TRUE AND CORRECT COPY OF THE ORIGINAL ON FILE IN THE OFFICE OF VALLEY COMMUNITY SERVICES DISTRICT
Secretary
MAR 16 1977

APPENDIX D
ORGANIZATIONS AND PERSONS CONTACTED

APPENDIX D
ORGANIZATIONS AND PERSONS CONTACTED

FEDERAL AGENCIES

U.S. Fish and Wildlife Service
Div. of River Basin Studies (Edward Aderkas)

U.S. Army Corps of Engineers
Construction Operations Division, San Francisco
(Rex Schleiger)

STATE AGENCIES

Caltrans
Sacramento (Mr. Atkinson)
District Office, San Francisco
(Ray Ploss, Jerry Hauke)
Field Office, Fremont (E.W. Coble)

Department of Fish and Game
Regional Office, Yountville, CA (Mike Rugg)

Department of Parks and Recreation
Office of Historical Preservation
Sacramento, CA (Gene Itogawa)

Regional Water Quality Control Board
Oakland Office (Larry Kolb)

State Water Resources Control Board
Sacramento, CA (Gil Wheeler, Jerry Anders,
Mike Falkenstein, Joe Pope)

COUNTY AGENCIES

Alameda County
Planning Dept. (Jerry Wallace, Norm Weisler)
Assessor's Office
Dept. of Public Works (Mr. Beckam)
Road Division (Ron Sorenson)

Contra Costa County
Planning Dept. (Darwin Myers, Dennis Fransen)
Dept. of Public Works (Ed King, Lyle Burks)

APPENDIX D

CITY, LOCAL, AND REGIONAL AGENCIES

Alameda County
  Planning Department, Zoning (Mrs. Davis)
  Administrator's Office (Roland Mayne)

Association of Bay Area Governments (ABAG)
  Berkeley, CA (John Davis, Robert Bradford)

Bay Conservation and Development Commission (BCDC)
  San Francisco (Robert Hickman)

City of Concord
  Dept. of Public Works (Ted Moss)

City of Fremont
  Dept. of Public Works (Myron Harman)
  Planning Dept.

City of Hayward
  Administrator's Office

City of Pleasanton
  Dept. of Public Works (Mr. Lamb)
  Planning Dept. (Brian Swift)

City of San Leandro
  Dept. of Public Works (R. H. Ward)

City of Union City
  Dept. of Public Works (Andy Keval)

San Lorenzo Library

Valley Community Services District (VSCD)
  (Doug Nelson)

City of Walnut Creek
  Dept. of Public Works (Mr. Boyle)

PRIVATE ORGANIZATIONS

Amador Valley Historical Society
  Pleasanton, CA (Herbert Hagemann)

California Native Plant Society
  Rare Plant Mapping Project
  U.C. Davis Aboretum (Mary Major)

John Carollo Engineers
  Walnut Creek, CA (Peter Williams)

CH2M-Hill
  Sacramento Office (Robert Harding)
  Reading Office (Don Showalter, Loring Hanson)

Kraftile Company
  Fremont, CA (Mr. Kraft)

Mission Peak Heritage Foundation
  Fremont, CA (Dr. Fisher)

San Lorenzo Village Homes Association
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Mr. Donald Miller
2862 Waverly Way
Livermore, CA 94550 f

Ms. Georgia Jacka
9541 Broadmoor Dr.
San Ramon, CA 94583 s

Mr. Clarence Hoenig
588 Tylen Avenue
Livermore, CA 94550 s

Mr. Juan Covian
4380 Chapman Way
Pleasanton, CA 94566 s

Mr. Non Staszkow
6826 Adobe Ct.
Pleasanton, CA 94566 s

Frances B. Headley
1640 Orchard Way
Pleasanton, CA 94566 s

Mr. Robert M. Pearson
3590 Churchill Ct.
Pleasanton, CA 94566 s

Ms. Anna Martinsen
4038 Payne Road
Pleasanton, CA 94566 s

Mr. George C. Lydiksen
553 Rowell Lane
Pleasanton, CA 94566 s

Contra Costa Taxpayers' Assoc.
P. O. Box 27
Martinez, CA 94553 s

League of Women Voters
2741 Jennifer Drive
Castro Valley, CA 94546 s

South County Ecology Ctr.
18313 Pepper Street
Castro Valley, CA 94546 s

TRI-City Ecology
2754 Olive Ave.
Fremont, CA 94538 s

John R. Lashelle
4810 McGee #309
Kansas City, MO 64112 s

Murray School District
7416 Brighton Dr.
Dublin, CA 94566 s

Ms. Peggy McElliott
Wilson, Jones, Morton & Lynch
P. O. Box 152
San Mateo, CA 94401 f

Mr. Robert Several
2046 Park Street
Livermore, CA 94550 s

Mr. Michael Wahlig
59 Nead Place
San Ramon, CA 94583 f

Mr. Vincent A. Benedetti
755 Concord Street
Pleasanton, CA 94566 s

Mr. George Bing
4128 Colgate Way
Livermore, CA 94551 s

William Black & Associates
7723 Amador Valley Blvd.
Dublin, CA 94566 s

H. Grant Corp. No. Calif.
Attn: Mr. G. F. Armstrong
550 Hamilton Ave., Suite 136
Palo Alto, CA 94301 s

Bissell & Karn
2551 Merced Street
San Leandro, CA 94577 s

Mackay & Somps
Attn: Mr. Ted Fairfield
3561 Ryder Street
Santa Clara, CA 95051 s

Sierra Club
Livermore-Amador Reg. Group
1163 Cancannon Blvd., #100
Livermore, CA 94550 f

Mr. Paul Regan
8589 Davona Drive
Dublin, CA 94566 s

Mr. Dan Lee
879 Via Seville
Livermore, CA 94550 f

Stoneson Constr. Corp.
3150 20th Avenue
San Francisco, CA 94132 s

Sunset Homes, Inc.
P. O. Box 849
Livermore, CA 94550 s

Whitecliff Homes
859 San Mateo Drive
San Mateo, CA 94401 s

Ward Ryder Const. Co.
P. O. Box 4388
Walnut Creek, CA 94596 s

Ms. Pamela Deuel
1040 California Avenue
Palo Alto, CA 94036 s

Mr. John Edmands
126 Spring Street
Pleasanton, CA 94566 s

Mr. Jake Miller
3145 David Avenue
Palo Alto, CA 94303 s

Farm Advisor
224 W. Winton Avenue
Hayward, CA 94544 s

Mr. Dennis Jordan
1122 B Street
Hayward, CA 94541 s

Mr. John B. Long
3231 Vineyard Avenue
Pleasanton, CA 94566 s

Grunwald Crawford Associates
802 No. Irwin Street
Hanford, CA 93230 s

California Wildlife Fed.
890 Washington
Santa Clara, CA 95050 s

Conservation Coordinators
P. O. Box 4161
Woodside, CA 94062 s

Comm. for Environmental
Information
1828 Hopkins Street
Berkeley, CA 94707 s

SAVE, INC.
Atten: Clarence Hoenig
588 Taylor Ave.
Livermore, CA 94550 s

Valley Ecology Center
401 So. K Street
Livermore, CA 94550 s

Ms. Penny Deleray
5171 Oakview Ct.
Pleasanton, CA 94566 s

Mrs. Melvin Hoch
4127 Chiltern Drive
Fremont, CA 94538 s

Mrs. David Oakley
37 Castledown Road
Pleasanton, CA 94566 s

Ms. Valerie Raymond
2638 Buenta Vista
Livermore, CA 94550 f

Sandia Corporation
P. O. Box 969
Livermore, CA 94550 s

Kaiser Sand & Gravel Div.
Kaiser Center
300 Lakeside Ave.
Oakland, CA 94612 s

Mr. Robert W. Foster
1726 Orchard
Pleasanton, CA 94566 s

Mr. Harlan S. Gelderman
600 San Ramon Valley Blvd.
Danville, CA 94526 f

Ecology Center
13 Columbus Avenue
San Francisco, CA 94111 s

The Nature Conservatory
Western Regional Office
215 Market Street
San Francisco, CA 94105 s

Bay Area Clean Water Council
5009 Charles Avenue
El Cerrito, CA 94530 s

Livermore Community Recycling
Center
874 Adams Avenue
Livermore, CA 94550 s

Water Resources Center
University of California
North Gate Hall
Berkeley, CA 94720 s

League of Women Voters
1519 Coral Avenue
San Leandro, CA 94578 s

Castlewood Corp.
P. O. Box 338
Fremont, CA 94566 s

League of Women Voters
P. O. Box 2638
Fremont, CA 94536 s

Contra Costa Bldg. & Construction Trades Council
2727 Alhambra Avenue
Martinez, CA 94553 s

Port of Oakland
66 Jack London Square
Oakland, CA 94607 s

Alameda Conservation Assoc.
P. O. Box 341
Alameda, CA 94501 s

League of Calif. Cities
2437 Santa Clara Ave.
Alameda, CA 94501 s

Mr. Ed Vomund
119 Linda Lane
Pleasanton, CA 94523 s

Mr. D. R. Bigger
301 Junipero
Pleasanton, CA 94566 s

Alameda Co. Comprehensive Health Planning Council
15001 Foothill Blvd.
San Leandro, CA 94578 f

Ms. Linda Asplin
4661 Holland Dr.
Pleasanton, CA 94566 s

Mr. Robert Bedam
6778 Menlo Ct.
Pleasanton, CA 94566 s

Mr. Edward Kinney
200 Bernal Avenue
Pleasanton, CA 94566 f

Assoc. Building Industry
East Bay Division
3462 Mt. Diablo Rd.
Lafayette, CA 94549 f

Assoc. General Contractor of Calif., Inc.
301 Capitol Mall
Sacramento, CA 95814 s

Calif. Builders Council
925 "L" Str., Suite 700
Sacramento, CA 95814 s

Sierra Club, Diablo Valley Chapter
Attn: Molley Reeves
126 Canon Dr.
Orinda, CA 94563 f

A. D. Little
One Maritime Plaza
San Francisco, CA 94111 f

Thomas Reid & Associates
Box 872
Palo Alto, CA 94302 s

Mr. C. R. Seymour
492 San Gabriel Court
Pleasanton, CA 94566 s

Dr. Howard F. Long
100 Neal St.
Pleasanton, CA 94566 s

Mr. John Van der Meer
19027 Mayberry Dr.
Castro Valley, CA 94546 s

Mr. Steve Wilcox
2158 Arroyo Court
Pleasanton, CA 94566 s

Ohlone Audubon Society
60 Overlook Court
Walnut Creek, CA 94596 s

Conservation Associates
220 Bush Street
San Francisco, CA 94104 s

Calif. Federation of Labor
995 Market Street
San Francisco, CA 94102 s

California Tomorrow
681 Market Street
San Francisco, CA 94105 f

Ms. Josephine Harding
540 E. Angela Avenue
Pleasanton, CA 94566 s

Morrison Homes
P. O. Box 23172
Pleasant Hills, CA 94523 s

Mr. Jim Trimmingham
4419 2nd Street
Pleasanton, CA 94566 s

Mr. Robert A. Pritchard
4037 Finday Way
Livermore, CA 94550 s

Ms. Joanne Angvich
2284 College
Livermore, CA 94550 s

Mr. Walt Goggin
18836 Lenross Ct.
Castro Valley, CA 94546 s

Lung Association
1536 Webster Street
Oakland, CA 94612 s

Mr. Charles Ladner
11595 Betlen Drive
Dublin, CA 94566 s

Mr. C. William Moore
1816 Tanglewood Way
Pleasanton, CA 94566 s

Bay Area Rapid Transit Distr.
800 Madison Street
Oakland, CA 94604 s

Bob Madsen
3950 Fernwood Way
Pleasanton, CA 94566 s

League of Women Voters
P. O. Box 702
Livermore, CA 94550 f

Mrs. Ruby Gilmore
76 Castlewood Dr.
Pleasanton, CA 94566 s

Mrs. Holly Ocon
43692 Ellsworth Str.
Fremont, CA 94538 s

Lawrence Livermore Lab.
East Avenue
Livermore, CA 94550 s

Mr. Gary H. Higgins
1413 Portola Avenue
Livermore, CA 94550 s

Mr. Ronald G. Musket
4985 Muriswood Dr.
Pleasanton, CA 94566 s

Beleaguered Earth Committee
17917 Beardsely
Castro Valley, CA 94546 s

East Bay Labor Journal
1622 - E. 12th Street
Oakland, CA 94606 s

Oakland-Alameda Co. Builders Exchange
321 East 12th Street
Oakland, CA 94601 s

San Leandro Chamber of Commerce
262 Davis Street
San Leandro, CA 94577 s

Castro Valley Ecology Center
18313 Pepper Street
Castro Valley, CA 94546 s

Clean Bay, Inc.
Attn: R. W. Norman
2280 Diamond Blvd.
Concord, CA 94520 s

Danville Renewal Corp.
Atten: Dr. Wilson Close
101 Diablo Road
Danville, CA 94526 s

Earth, the Ecology Movement
Attn: Anthony De Bellis
231 Kuss Road
Danville, CA 94526 s

California Water Service
P. O. Box 1170
195 So. N Street
Livermore, CA 94550 s

Pleasanton Township Co. Water Dist.
P. O. Box 67
Pleasanton, CA 94566 s

Henry O. Lienhard
16169 Hesperian Blvd.
San Lorenzo, CA 94580 s

Donald Holtgrieve
19322 Parsons Avenue
Castro Valley, CA 94546 s

PG&E
Attn: Mr. Jared Brown, Rm. 251
77 Beale Street
San Francisco, CA 94106 s

Southern Pacific Transportation Co.
Attn: Mr. Daniel O'Callaghan
1707 Wood Street
Oakland, CA 94607 s

Castro Valley Chamber of Commerce
3484 Village Drive
Castro Valley, CA 94546 s

Elwood Brooks
4973 Elrod Drive
Castro Valley, CA 94546 s

Bay Area League of Women Voters
Hotel Claremont
Suite 132
Berkeley, CA 94705 s

ENFO
P. O. Box 761
Berkeley, CA 94701 s

Save S.F. Bay Assoc.
P. O. Box 925
Berkeley, CA 94701 s

Sierra Club
Attn: Bob Rutemoller
P. O. Box 282
Hayward, CA 94543 s

Bay Area Planning Directors Association
835 E. 14th Street
San Leandro, CA 94577 s

Environmental Defense Fund
2728 Durant Avenue
Berkeley, CA 94704 f

Bay Area League of Indust. Associations
3640 Grand Avenue
Oakland, CA 94612 s

Alameda Co. Sewerage Advisory Committee
P. O. Box 95
San Lorenzo, CA 94580 s

Sierra Club
220 Bush Street
San Francisco, CA 94580 f

Ecology Center
2179 Alston Way
Berkeley, CA 94704 s

National Realty Committee
Attn: Suzzanne Welborn
1122 Connecticut Ave. N.W.
Washington, D.C. 20036 s

Mr. Ted Lannin
5372 Ridgeview Rd.
Pleasanton, CA 94566 s

Mr. Alan Winslow
28 Castlewood Dr.
Pleasanton, CA 94566 s

Mr. John Fraga
1486 Koller Avenue
Pleasanton, CA 94566 s

Mr. Joe Antonini
374 Ray Street
Pleasanton, CA 94566 s

Chet Anderson
P. O. Box 176
Livermore, CA 94550 s

Mr. Dean La Field
Central Division
3462 Mt. Diablo Blvd.
Lafayette, CA 94549 s

Albert D. Seeno Constr.
Attn: Mr. Joseph Judson
3890 Railroad
Pittsburg, CA 94565 s

Mrs. Sylvia Landgraf
P. O. Box 227
Sunol, CA 94586 s

National Resources Defense Council
664 Hamilton
Palo Alto, CA 94201 f

Nature Conservancy for No. California
2932 Pine Way
Berkeley, CA 94707 s

Trustees for Conservation
170 Arlington Avenue
Berkeley, CA 94707 s

Mr. Terry Smith
6258 Garner Ct.
Pleasanton, CA 94566 s

Mr. Byron D. Athan
26 Brian Ct.
San Ramon, CA 94583 s

Mr. James Nelson
11836 Silvergate Dr.
Dublin, CA 94566 s

Ms. Ann Jolley
131 Winged Foot Pl.
San Ramon, CA f

Ms. Rosalie Gasaway
6218 Garner Ct.
Pleasanton, CA 94566 s

Mr. Richard Fahey
152 Baltusiol Pl.
San Ramon, CA f

Mr. Roger McLain
1787 Beachwood
Pleasanton, CA 94566 s

Assoc. Sportsmen of California
2636 Judah Street
San Francisco, CA 94122 s

Calif. Manufacturers Assoc.
923 12th Street
Sacramento, CA 95814 s

Bay Area League of Women Voters
1 Rancho Diablo Road
Lafayette, CA 94549 s

Kennedy Engineers
657 Howard Street
San Francisco, CA 94105 f

Jenks & Adamson
543 Byron Street
Palo Alto, CA 94301 s

John Carollo Engineers
1990 No. California Blvd.
Walnut Creek, CA 94596 f

Bechtel Corporation
P. O. Box 3695
San Francisco, CA 94119 s

Brown & Caldwell
1501 No. Broadway
Walnut Creek, CA 94596 f

General Electric
P. O. Box 846
Pleasanton, CA 94566 s

Kaiser-Sunol
5550 Niles Canyon Rd.
Sunol, CA 94586 s

Coast Mfg. & Supply
10 Trevarno Road
Livermore, CA 94550 s

Anderson, A. Const.
Mr. Arvid Anderson
3326 Glendora Dr.
San Mateo, CA 94402 s

W. Apperson Interiors
530 St. Mary
Pleasanton, CA 94566 s

Blackhawk Devel. Co.
Attn: Mr. R. Carrau
3171 Blackhawk
P. O. Box 807
Danville, CA 94526 s

Braddock & Logan
Attn: Mr. J. Hughes
14795 Washington Avenue
San Leandro, CA 94578 s

People for Open Space
46 Kearny Street
San Francisco, CA 94133 s

Audubon Society
2754 Olive Avenue
Fremont, CA 94538 s

Del Prado Homeowners Assoc.
6595 Paseo Santa Cruz
Pleasanton, CA 94566 s

Highland Oaks Homeowners Assoc.
7678 Driftwood
Pleasanton, CA 94566 s

Laguna Vista. Est. Homeowners Assoc.
4472 Comanche Way
Pleasanton, CA 94566 s

Mackey Park Villas Homeowners Assoc.
1624 Calle Santiago
Pleasanton, CA 94566 s

Mission Park Homeowners Assoc.
492 San Gabriel Court
Pleasanton, CA 94566 s

Mrs. Janice Delfino
18673 Reamer Dr.
Castro Valley, CA 94536 s

Pleasanton Valley Homeowners Assoc.
5026 Blackbird Way
Pleasanton, CA 94566 s

Stoneridge Homeowners Assoc.
7381 Jaybrook Ct.
Pleasanton, CA 94566 s

Val Vista Homeowners Assoc.
6252 Gibson Court
Pleasanton, CA 94566 s

Livingston & Blaney
40 Gold Street
San Francisco, CA 94133 s

Environmental Studies Dept.
San Jose State University
125 South 7th Street
San Jose, CA 95114 s

Stanford University
Sponsored Projects Info. Ctr.
Attn: Kathy Walby
Stanford, CA 94305 s

Wilsey & Ham
1035 E. Hillsdale Blvd.
Foster City, CA 94404 s

League of Women Voters
Environmental Pollution Comm.
853 Pine Lane
San Rafael, CA 94930 s

Stanford Conserv. Group
Tresidder Union
Stanford Univeristy
Stanford, CA 94305 s

The Bay Area Council, Inc.
Attn: Mr. Angelo Siracusa
348 World Trade Center
San Francisco, CA 94111 s

Palomares Area Landowners Organization
32880 Palomares Road
Castro Valley, CA 94546 s

Dr. Arthur Emmes
3474 Village Drive
Castro Valley, CA 94546 s

San Leandro Ecology Center
1190 Davis Street
San Leandro, CA 94577 s

Jo McClellan
124 Via Linares
San Lorenzo, CA 94580 s

Meda Soares
19987 Forest Avenue
Castro Valley, CA 94546 s

Vickie Remer
4016 Stevens Street
Castro Valley, CA 94546 s

Castro Valley Ecology
c/o 21455 Birch Street
Hayward, CA 94541 s

J. V. Couche
4958 Kathleen Avenue
Castro Valley, CA 94546 s

Washington Homeowners Assoc.
2614 Marine View Drive
San Leandro, CA 94577 s100

San Lorenzo Village Homes Assoc.
377 Paseo Grande
San Lorenzo, CA 94580 s

Center Street Homeowners Assoc.
4010 Sommerset Avenue
Castro Valley, CA 94566 s

Paul Tull
2243 Linden
Livermore, CA 94550 s

Thurmon Caudill
4715 B Augustine
Pleasanton, CA 94566 s

James Carskaddon
336 Adelle
Livermore, CA 94550 s

James Jordon
7218 Stonedale Dr.
Pleasanton, CA 94556 s

Hugh Ellsaesser
4293 Stanford Way
Livermore, CA 94550 s

Roman Morkowski
1987 De Vaca Way
Livermore, CA 94550 s

Cecil Alberts
1398 Hopyard Road
Pleasanton, CA 94556 s

Charles Mahler
1359 Flanders Way
Livermore, CA 94550 s

Laurel School
2652 Vergil Ct.
Castro Valley, CA s

Baywood School
21954 Dolores
Castro Valley, CA s

St. John's School
270 Lewelling Blvd.
San Lorenzo, CA s

San Lorenzo High School
50 East Lewelling Blvd.
San Lorenzo, CA s

Lewelling School
750 Fargo Avenue
San Leandro, CA s

Manor Baptist School
1845 Lewelling Boulevard
San Leandro, CA s

A. R. Peterson & Sons
20478 Mission Boulevard
Hayward, CA s

Trailways Bus System
19740 Mission Boulevard
Hayward, CA s

Mr. Kenneth Mercer
2644 Starling Ct.
Pleasanton, CA 94566 f

Mr. William Parness
City of Livermore
City Hall, 2258 First Street
Livermore, CA 94550 f

League of Women Voters
of San Leandro
Attn: Mrs. Carol Sederighi
1516 Regent Drive
San Leandro, CA 94577 s

California Nature Plant Soc.
Room 317 2490 Channing Way
Berkeley, CA 94705 s

East Bay Zero Population Growth
2179 Allston Way
Berkeley, CA 94704 s

Mrs. Lorie Baxter
4037 Lana Terrace
Fremont, CA 94536 s